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AMERICAN AGRICULTURIST

FOR THE FARM, GARDEN & HOUSEHOLD.



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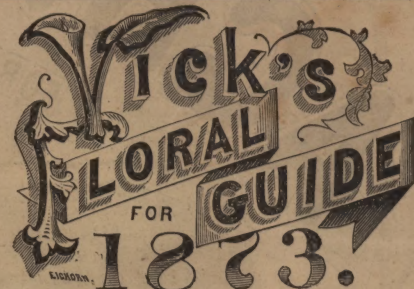
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AFTER THE GREAT SNOW-STORM.—*Drawn and Engraved for the American Agriculturist.*

In many parts of the Northern States the scene depicted by our artist in the above engraving happens yearly. Not uncommonly the winter opens with a heavy fall of snow, sometimes equal to two feet on a level, and this, when driven into heaps and banks by the north wind, makes it necessary for backwoodsmen to turn out and "break roads." Then the neighbors come out each with a yoke of cattle—for horses would be useless for this work—and one mounted on snow-shoes leads the way, followed by the oxen, who waddle through the deep snow slowly and clumsily; but they beat down the snow with their great limbs, and when five or six or more yoke follow each other, a

broad track is soon made. So they proceed, stopping now and then that a great tree, overloaded and broken down with snow and fallen across the road, may be cut out. By and by a drift is reached, into which the leading oxen plunge until nothing but their noses, elevated as much as possible, and the tips of their horns, can be seen. But the snow settles down over their backs as they wallow through the deepest part, and then as they emerge they look as though they swam in a sea of the purest foam, which rolls down the side of the drift in little ripples, and drops off their great sides. The others follow, and the "beautiful snow" that has been woven by the fingers of the north wind into

a fringe of purest white and most delicate pattern around the edge of the woods, is all broken down and soiled, and its beauty all gone. This is the way some look at it, but those whose business it is to battle with snow, and beat it down, making roads through it, or chopping down trees and making logs in it, or wading through it to get to their barns to feed their hungry cows, and shovel it away from their stable-doors, or hunt beneath it for the ax or what-not, carelessly left out to be snowed under—why, they vote it a nuisance, without considering how they would do their work in the woods, or haul their great loads, or go sleigh-riding, if it were not for a great snow-storm.

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Disease in Poultry.—"Mrs. L. H. B.,"

Postville, Iowa, finds that the feathers fall off the breasts of her fowls, and that the toes gradually decay until only stumps are left, and that this complaint spreads amongst her fowls. She asks what is it? and what is the remedy?—It is probably not contagious, as supposed, but spreads because the cause is general. The cause is very likely unclean roosts and floors in their houses, not sufficient variety of food, and want of an alternative as medicine. Their quarters should be well cleansed with lime, some rusty iron with sulphur should be kept in their drinking water, and they should have some cabbage or raw potatoes chopped given regularly to them.

Calendar for December.

Day of Month.	Day of Week.	Boston, N. England, N. York State, N. Michigan, Wisconsin, Iowa, and Oregon.			N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois.			Washington, Maryland, Virginia, Kentucky, Missouri, and California.		
		Sun rises.	Sun sets.	Mo'n sets.	Sun rises.	Sun sets.	Mo'n sets.	Sun rises.	Sun sets.	Mo'n sets.
1	S	7 10	4 28	5 15	7 5	4 31	5 21	7 0	4 39	5 27
2	M	7 11	4 28	6 15	7 6	4 34	6 21	7 1	4 39	6 28
3	T	7 12	4 28	7 25	7 7	4 34	7 31	7 2	4 39	7 37
4	W	7 13	4 28	8 40	7 8	4 33	8 45	7 3	4 39	8 50
5	T	7 14	4 28	9 55	7 9	4 33	11 15	7 4	4 38	10 4
6	F	7 16	4 28	morn	7 10	4 33	morn	7 6	4 38	11 18
7	S	7 17	4 28	0 25	7 12	4 33	0 26	7 7	4 38	0 27
8	M	7 18	4 28	1 34	7 13	4 33	1 34	7 8	4 38	1 34
9	T	7 19	4 28	2 42	7 14	4 33	2 40	7 9	4 38	2 39
10	W	7 20	4 28	3 49	7 15	4 33	3 47	7 10	4 38	3 44
11	T	7 21	4 28	4 57	7 16	4 33	4 54	7 11	4 38	4 50
12	F	7 22	4 28	6 3	7 17	4 33	5 58	7 12	4 38	5 53
13	S	7 23	4 28	rises	7 17	4 33	rises	7 12	4 38	rises
14	M	7 24	4 29	5 4	7 18	4 31	5 10	7 13	4 39	5 17
15	T	7 24	4 29	5 58	7 18	4 31	6 5	7 13	4 39	6 11
16	W	7 25	4 29	6 55	7 19	4 34	7 0	7 14	4 40	7 6
17	T	7 26	4 29	7 55	7 19	4 34	8 0	7 14	4 40	8 5
18	F	7 26	4 30	8 55	7 20	4 35	8 59	7 15	4 41	9 4
19	S	7 26	4 30	9 57	7 20	4 35	10 0	7 15	4 41	10 3
20	M	7 27	4 31	10 57	7 21	4 36	10 58	7 15	4 42	11 0
21	T	7 27	4 31	11 58	7 21	4 36	11 59	7 16	4 42	11 59
22	F	7 28	4 32	morn	7 22	4 37	morn	7 16	4 43	morn
23	S	7 28	4 32	1 0	7 22	4 37	0 59	7 16	4 43	0 59
24	M	7 29	4 33	2 5	7 22	4 38	2 3	7 17	4 44	2 1
25	T	7 29	4 33	3 14	7 23	4 38	3 11	7 17	4 44	3 8
26	W	7 29	4 34	4 26	7 23	4 39	4 22	7 17	4 45	4 18
27	T	7 29	4 31	5 43	7 23	4 39	5 38	7 18	4 45	5 32
28	F	7 29	4 35	6 58	7 23	4 40	6 52	7 18	4 46	6 46
29	S	7 30	4 36	sets	7 24	4 41	sets	7 19	4 47	sets
30	M	7 30	4 37	6 18	7 24	4 42	6 23	7 19	4 48	6 29
31	T									

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AMERICAN AGRICULTURIST.

NEW YORK, DECEMBER, 1872.

We are beginning to look back on the year 1872 and forward to the year 1873. December is a half-way house, a breathing spot. It is neutral ground. The labors of the past year are nearly ended; those of the new hardly commenced. The days are short, and during the long evenings we shall think over the past, and lay plans for the future. With the majority of farmers the past year has not been a prosperous one. But let us not brood over our troubles. If we have made mistakes, let us look them fairly in the face. Let us not seek to excuse ourselves. Let us acknowledge that they were mistakes. Let us feel them keenly. Let them make a deep impression on the mind. There is pleasure, profit, strength, and wisdom in humility. But do not brood over blunders. It will do no good. Better treat them as you would a hollow tooth. Have it filled or have it out. It does no good to let it ache. We need to forget the things that are behind and to press forward. We need courage, faith, hope, energy. The man that sees a lion in the way, and who will not take his hands out of his pockets for reason of the cold, will not make a successful American farmer. It is difficult for us to comprehend the character of the age in which we live. Things move so rapidly that we must be wide-awake or we shall be left behind.

We greatly mistake the signs of the times if we are not about to introduce a better system of agriculture, better breeds of animals, and a higher condition of farm-life. But the first improvement must be in ourselves. We must think more and work to better advantage. Never allow yourself to say "I have not time" to do anything that you ought to do. It is rarely true. You may not have strength, or energy, or inclination. Very few of us have learned how to economize or husband our energy. We waste it in worrying, or dreaming, or moodily wishing instead of working. It will do no good to complain of "hard times." They are hard. And we deeply sympathize with, and would not say a harsh word to a farmer with a family dependent on him who has pressing debts to pay and

little to sell, and that little not worth in market the cost of production. There is no remedy except to hope and to work. To a man who does not work times are never good. To one who does, there are fair prospects ahead—we think never better or brighter.

Hints about Work.

Evening Work.—We do not believe in "all work and no play." We believe in working with a will when we do work, and then resting. We work that we may rest, and rest that we may work. We can often rest ourselves more by changing the character of our employment than by absolute idleness. A farmer with the right kind of head and heart can not sit down at night with much comfort if he knows his horses are covered with mud and sweat in the barn, or if he knows there is no kindling-wood to start the fire in the morning, or that there is a pane out of one of the windows in the cellar. The sun sets at half-past four, and we seldom go to bed before half-past nine. How shall we use these five hours to the best advantage? What the discovery of gas was to the cities, the discovery of petroleum is to the country. Our farm-houses are now as well lighted, or might be, as those of the city. The dim horn-lanterns of our early days, by the aid of which we groped about the barns and stables to feed the cows and clean and bed the horses, and the tallow-dips by which we have studied many an hour, have disappeared before the brilliant light of our kerosene-lamps. There is no longer any excuse for sitting hour after hour by the kitchen stove. If there is work that needs doing in the barn, get things ready during the day and do it in the evening. Nearly every farmer is behindhand with his work. It has to be done some time, and will be done. We are not now urging farmers to work harder than they do. All that we mean is that they had better work evenings for a week or two than let things drag along all winter. It will make a vast difference how you spend your evenings. Give yourself no rest until you have caught up with your work and got things straight. It is a shame to a man to let the windows of his house shake in the casements. Many a farm-house is cold and uncomfortable all winter for want of a little attention to the doors and windows. Make everything snug and tight, and then ventilate. You should have control of the air, and not let it control you.

Be Clean in the House.—There is much dirty work to be done on the farm, and a farmer should dress appropriately to his work. But there is no reason when his work is done for the day why he should sit down in the evening with his pantaloons stuck in his boots. We cordially dislike foppishness, but cleanliness is one of the cardinal virtues. The farmer or the farmer's son who does not make himself and his clothes clean before he sits down at night has something yet to learn in regard to the pleasures and advantages of a quiet country life.

Animals.—Next to himself and his family, a farmer's thought and attention should be turned to his animals. If we look upon them as machines for the conversion of straw, stalks, roots, hay, and grain into beef, mutton, wool, milk, pork, eggs, etc., we should never forget that they differ very materially from ordinary machines, that we can start and stop when we please, and stow them away when not in use. The animal machine is always running, winter and summer, night and day, and a farmer's first care should be to see that it is always running to some good purpose.

Horses.—If possible, work the horses moderately during the winter, and let them have grain enough to keep them in good condition. A horse that has been over-worked and surfeited with grain may be the better for a winter's run at a straw stack. But this is not the usual condition of farm horses. As a rule, it would be better to keep them in the stable and work them regularly. Labor is comparatively cheap in winter, and there is much work that can be done with advantage, especially if it has been prepared in advance. Gravel may be drawn for the roads; stones or rails may be drawn for

fences; manure may be drawn out and spread on the fields; plaster can be drawn from the mill; apple-trees can be pruned and the branches drawn off at the time and not left on the ground; grain can be taken to the mill and be ground, not merely as it is wanted, but enough for the whole year. Draining-tiles may be procured, lumber drawn, wood brought to the house and sawn; straw, hay, and corn-stalks may be cut into chaff with a horse-power machine. In many places hay may be drawn to market, and a load of manure brought back with profit and advantage. These are only a few things that may be done. We are sure that farmers, by a little planning in advance, can very generally keep nearly all their teams moderately at work all winter.

Cows.—Where hay is scarce and straw and stalks abundant, it will pay well to chaff the latter for cows and mix mill-feed and corn-meal with it. Keep the cows in a moderately warm, well-ventilated stable, clean it out every day, and turn out the cows twice a day to water, and let them stay out an hour or two when the weather is favorable. But avoid letting them get chilled in storms.

Sheep.—The best way to feed hay to sheep is to cut it into chaff by horse-power. It is little trouble to feed, and there is little or no waste. And we are not sure that it is not better to cut up straw and stalks also, and feed them with a little meal as we do cattle. The first point in the management of sheep is to provide dry quarters; 2d, To avoid overcrowding; 3d, To litter lightly and regularly every day; and 4th, To guard against any fermentation of the manure under the sheep. Give fresh water every day, and salt regularly. Feed liberally before sundown. Let there be straw or other food in the racks for the sheep to eat during the night.

Swine.—Where corn is worth less than 40 cents per bushel it will pay well, even at the present low price of pork, to make the hogs fat before selling them. Packers want small, fine-boned pigs, but they want them well-fattened. Store pigs should be kept growing rapidly. The prospects are favorable for an advance in pork another year, and farmers, especially in the West, should feed their young stock liberally. Breeding sows should have as much exercise as you can make them take in searching for food. But, at the same time, they should be able to find as much as they need to keep them in vigorous health and good condition. For thoroughbred sows, which keep easily, and are apt to get too fat, the food should be of a rather bulky nature, such as bran, turnips, etc. Sows go sixteen weeks. If you have a number of sows, and are short of breeding-pens, it will be well to push forward a few sows and keep back the others. This can be done by giving those you wish served first a little extra corn for a week or ten days. Provide dry, well-ventilated quarters, and see that they are kept clean and well littered. Do not allow young and old pigs to run together. The young, growing pigs should have all the food they will eat and digest. If they are of the right kind, that mature early, they must have good food, and plenty of it, while young, or they will not be healthy.

Poultry.—Select out the hens and cocks you intend to keep, and fatten the rest. If you wish eggs in winter, provide warm quarters, and feed more or less animal food. Keep the hen-house clean, and see that the hens do not want for water.

As Long as the Ground is not Frozen keep at work getting ready for winter. Finish the fall plowing. Plow the garden. If you have any large stones to draw off, raise them up a few inches now, and put a small stone or piece of wood under them to prevent their being frozen to the ground. They can then easily be loaded on to a sleigh or stone-boat in winter and drawn off easily. Bank up the cellars. If potatoes are pitted, and have only one coat of straw and earth on them, put on another thin layer of straw and cover it with a few inches of earth. This is the great secret of keeping out frost. The layer of straw between two layers of earth holds dead-air, which is the cheapest and best of non-conductors. Go over the farm during or immediately after a heavy rain with a hoe and spade, and see that the water has a chance to flow off freely.

This is very important, not only for wheat, but for land intended to be plowed in spring.

Work in the Horticultural Departments.

There is seldom a month in which something can not be done towards advancing the spring work. There are many mild days when things which were neglected in the fall can be attended to. There is now plenty of time for reading, and no good gardener will fail to provide himself with suitable books and papers to employ his mind during the long evenings. New horticultural books are published from time to time, upon different subjects, most of which contain some items of interest, and are worthy of a careful perusal. During mild days, rubbish, which often collects around the barn and out-buildings, may be taken away, thus making the house and grounds look as if they were properly cared for.

Kitchen Garden.

Cold-Frames.—Do not close the sashes entirely, except at night, and when the weather is above freezing remove them entirely.

Pits in which roots are stored, should not be covered until really freezing weather comes, and then gradually, just enough to keep out frost.

Roots fresh from the ground are the best. The season of digging may be prolonged by covering the beds with litter, to prevent the ground from freezing. Store a quantity in dry earth in the cellar, to use while those outside are not accessible.

Spinach, Lettuce, etc., which are to remain in the open ground during the winter, should be covered with leaves, hay, or other litter.

Rubbish.—If there is no snow upon the ground, the dry weeds, old vines, and everything which will prevent the easy working of the plow, may be burned, and the ashes saved for use the next season.

Bean-Poles.—Do not allow these to remain exposed to the weather. With shelter they may be made to do service for several seasons. Pea-brush seldom lasts more than one season, though occasionally, with care, it will do the second spring.

Seeds.—Thrash out and clean all that remain, and see that each variety is supplied with a proper label and date. Keep in a cool room, where mice will not trouble them.

Orchard and Nursery.

Trees.—Young trees need care at this season, whether newly set or not, as there is great danger from mice and stray cattle. The gates and fences should be properly secured, and when a light snow falls, it should be firmly trodden down around each tree, to keep the mice from gnawing the bark. It is a good practice to raise a mound of earth, a foot high, around the trunk of newly-set trees, as a support for them during the high winds, as well as a security against mice.

Rabbits are prevented from injuring the trees by sprinkling blood upon them, or wrapping them with tarred paper; the former is, however, the best.

Pruning.—If any pruning is to be done, it is better to select mild days during early winter than to delay until spring. Where large limbs are removed, the wounds should be covered with a varnish of gum-shellac, or with melted grafting-wax.

Cions.—When the trees are not frozen, cions may be cut, labeled, tied in small bundles, and stored in earth or sawdust. Grafting is a very easy method of stocking an orchard with good varieties of fruit, and the operation has often been explained.

Water.—Should any water stand upon the surface of the orchard, surface drains should be opened.

Root-Grafting.—This can be done indoors, when the weather is too cold to admit of working outside. The varieties should be kept separate; place the grafted roots in boxes with earth or sand.

Seeds of stone-fruits must be buried, if not already done, in order to expose them to the action of the frost. If the quantity is small, they may be buried

in boxes in the open ground, where they are subjected to alternate thawings and freezings.

Fruit Garden.

Raspberries.—Bend down the canes of the tender varieties, and cover with earth before the ground freezes.

Strawberry Beds.—These should receive a covering of straw, or bog-hay, or leaves, two or three inches thick. A little earth or some brush will be necessary to prevent the leaves from blowing away. Care should be used not to cover too deeply, as the object is to prevent sudden changes of heat and cold, and not to prevent freezing.

Grape Vines.—These ought to have been pruned last month, but advantage may be taken of any mild days to prune now. Young vines, whether tender or hardy, do best if laid down.

Wood for trellises and stakes may be prepared ready for setting in the spring. Chestnut and locust posts are very durable, and are best where it is necessary to have wood in contact with the ground.

Flower-Garden and Lawn.

Protection.—The same rules apply here for the protection of half-hardy shrubs and trees, as given for strawberries, etc. Tender roses are best treated by laying down and covering with sods.

Climbers which are not entirely hardy at the North, should be taken down from their trellises, and covered with earth.

Pits.—Plants kept in pits and frames, must be kept dormant, and take care not to keep them too wet. Plants stored in the cellar do best when surrounded by dry earth, and kept without water.

Trellises, etc.—Put all movable wooden trellises and seats under cover. Unpainted ones will last longer if a good coat of petroleum is applied to them.

Evergreens.—Protect the young trees by surrounding them with evergreen boughs; this slight protection will often save trees which when older will prove perfectly hardy.

Greenhouse and Window Plants.

Air is one of the necessary elements of success in plant-growing, whether in the house or greenhouse. Open the ventilators every day when the weather is not freezing, opening only those on the opposite side from which the wind is blowing.

Water.—Give only when the plants are dry; if watered too much, the soil becomes so thoroughly saturated that it is impossible for the roots to grow well. Sprinkle or shower the plants as often as convenient, except in the coldest weather.

House Plants usually suffer more from dust and a dry atmosphere than from any other cause, and the only remedy is to shower often, and to occasionally sponge the foliage of the smooth-leaved plants, such as Camellia, Ivy, etc.

Commercial Matters—Market Prices.

Gold declined to 111½ and advanced to 114¼, closing November 12th at 113½ against 113 on the 12th of October. The disease among the horses in this city and vicinity has very seriously checked business in the Produce line, by retarding the forwarding movement. Breadstuffs have been less active, and variable as to values, but close with some show of firmness in the instances of Flour, Wheat, Oats, and Barley, which are now offered less freely. Corn leaves off easier, on a liberal supply. The export inquiry has been less confident. Provisions have been generally quoted stronger in price, on a good demand, but close less buoyantly. An extraordinarily large sale of Beef, embracing 6500 tes, and 300 bbls., product of a single Western packing house, was reported on the 12th of November. Wool has been in more demand and on the advance, closing buoyantly, in view of the reported destruction of a large proportion of the stock of Domestic in Boston, by the great fire in that city. Cotton has been active, but irregular, closing weak. Hay, Hemp, and Seeds, quiet, but about steady. Hops and Tobacco in good demand at steadier rates. Apples have been purchased with unusual freedom, for export to Liverpool, Glasgow, London, and the German ports, and close higher.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show the transactions for the month ending November 12, 1872, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
24 d's this m'th. 345,000 2,817,000 3,569,000 26,000 1,111,000 895,000
25 d's last m'th. 291,000 2,220,000 5,524,000 27,500 1,135,000 1,100,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
24 d's this m'th. 313,000 2,438,500 3,597,000 41,000 416,000 1,496,000
25 d's last m'th. 321,000 2,749,000 5,573,000 61,000 43,000 1,854,000

2. Comparison with same period at this time last year.
RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
24 days 1872. 349,000 2,817,000 3,569,000 26,000 1,111,000 895,000
27 days 1871. 437,000 4,646,000 1,207,000 217,000 1,135,000 1,719,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
24 d's 1872. 313,000 2,438,500 3,597,000 41,000 416,000 1,496,000
27 d's 1871. 304,000 4,116,000 2,781,000 72,000 981,000 1,605,000

3. Exports from New York, Jan. 1 to Nov. 6.

Flour, Wheat, Corn, Rye, Barley, Oats.
1872. 931,176 10,351,411 23,102,108 660,988 22,656 29,824
1871. 1,506,653 20,579,704 10,872,069 487,547 90,134 39,211

1870. 1,693,508 15,735,848 379,926 92,431 134,230 20,020
1869. 1,304,334 16,197,951 1,595,282 130,948 46,594 84,969
1868. 842,393 4,509,527 5,615,795 153,093 61,598 149,479

4. Stock of grain in store at New York.

Wheat, Corn, Rye, Barley, Oats, Malt.
November 6. 429,760 4,783,426 31,374 376,750 2,191,362 250,930
October 7. 23,142 3,842,181 39,925 40,025 2,505,006 12,535

September 9. 95,674 2,661,982 89,839 51,135 2,638,976 311,611
August 12. 83,321 429,104 130,161 53,789 2,077,593 215,408

5. Receipts at head of tide-water at Albany each season to Nov. 1st.
Flour, Wheat, Corn, Rye, Barley, Oats.
1872. 104,100 7,801,400 25,434,200 357,300 2,119,000 5,075,300
1871. 233,000 18,184,000 18,124,000 707,700 2,336,000 4,833,200
1870. 356,600 13,918,300 4,584,300 529,900 2,306,500 5,210,900

CURRENT WHOLESALE PRICES.

	Oct. 14.	Nov. 12.
PRICE OF GOLD.	113	113
Flour—Super to Extra State	75 @ 7 75	75 @ 7 75
Super to Extra Southern	5 80 @ 12 00	5 50 @ 13 00
Extra Western	6 75 @ 12 00	6 75 @ 13 00
Extra Genesee	7 80 @ 10 00	7 80 @ 10 00
Superfine Western	5 75 @ 6 50	5 65 @ 6 25
RYE FLOUR	4 25 @ 5 35	3 75 @ 6 12 1/2
CORN MEAL	3 00 @ 3 35	3 00 @ 3 30
BUCKWHEAT FLOUR—#100 lb	3 65 @ 4 00	3 75 @ 4 00
WHEAT—All kinds of White.	1 70 @ 2 05	65 @ 2 00
All kinds of Red and Amber.	1 30 @ 1 75	1 28 @ 1 75
CORN—Yellow	65 @ 66	65 @ 65 1/2
Mixed	62 @ 64 1/2	63 @ 64 1/2
OATS—Western	41 @ 50	39 @ 49 1/2
State	45 @ 55	42 @ 48 1/2
RYE	85 @ 88	80 @ 85
BARLEY	85 @ 1 18	80 @ 1 19
HAY—Bale, #100 lbs.	1 00 @ 1 50	95 @ 1 50
STRAW, #100 lbs.	65 @ 1 05	75 @ 1 20
COTTON—Middlings, #10	19 1/2 @ 19 1/2	19 @ 19 1/2
HOPS—Crop of 1872, #10	25 @ 30	30 @ 37 1/2
FRUIT—Live Geese, #10	40 @ 45	45 @ 70
SWED—Clover, #10	9 1/2 @ 10 1/2	9 1/2 @ 9 1/2
Timothy, #1 bushel	3 50 @ 3 75	3 12 1/2 @ 3 50
Flax, #1 bushel	1 95 @ 2 00	1 90 @ 2 00
SUGAR—Refined & Grocery #10	8 @ 11 1/2	8 1/2 @ 11 1/2
MOLASSES, Cuba, #1 gal.	20 @ 28	18 @ 37
COFFEE—Rio (Gold), #10	14 @ 17 1/2	15 @ 18 1/2
Tobacco, Kentucky, &c., #10	9 @ 16	9 @ 16
Seed Leaf, #10	8 @ 50	8 @ 50
Wool—Domestic Fleece, #10	53 @ 73	55 @ 73
Domestic, pulled, #10	25 @ 55	25 @ 55
California, clip, #10	20 @ 40	20 @ 40
TALLOW, #10	8 1/2 @ 9 1/2	8 1/2 @ 9 1/2
OIL—Coke, #1 ton	37 00 @ 38 00	38 50 @ 40 00
Pork—Mess, #1 barrel	13 90 @ 14 40	15 87 @ 16 12
Prime, #1 barrel	11 50 @ 11 75	12 50 @ 12 75
BEEF—Plain mess, #10	3 00 @ 9 00	3 75 @ 7 75
LARD, in tins, & barrels, #10	8 1/2 @ 9 1/2	8 1/2 @ 8 1/2
BUTTER—State, #10	15 @ 25	20 @ 38
Western, #10	9 1/2 @ 35	9 1/2 @ 25
CHEESE	5 @ 14 1/2	5 @ 15
BEANS—#1 bushel	1 50 @ 2 35	1 20 @ 3 25
PEAS—Canada, free, #10	1 10 @ 1 15	1 08 @ 1 16
EGGS—Fresh, #1 dozen	17 @ 31	29 @ 34
POULTRY—Fowls	27 @ 20	12 @ 20
Turkeys—#10	18 @ 21	14 @ 22
Geese, #1 pair	2 03 @ 3 25	1 75 @ 3 00
Ducks, #1 pair	62 1/2 @ 1 12 1/2	62 1/2 @ 1 00
Woodcock, #1 pair	1 00 @ 1 25	70 @ 85
Partridges	1 00 @ 1 25	62 1/2 @ 1 25
WILD DUCK, #1 pair	3 1/2 @ 75	35 @ 2 50
QUAIL—#1 doz.	— @ —	2 00 @ 3 00
VENISON—#10	— @ —	13 @ 21
HARES—#1 pair	— @ —	50 @ 80
RABBITS—#1 pair	— @ —	35 @ 50
TURKEYS—#10	2 00 @ 2 50	1 00 @ 1 75
CABBAGES—#100	6 00 @ 10 00	6 00 @ 10 00
ONIONS—#100 bunches	2 50 @ 3 50	2 50 @ 3 50
ONIONS—#100 bbl.	2 00 @ 3 50	2 50 @ 4 50
BROOM—CORN—#10	2 @ 7	2 @ 8
APPLES—new, #1 barrel	62 1/2 @ 2 50	1 25 @ 3 50
POTATOES—#1 bbl.	1 25 @ 2 25	1 75 @ 3 00
CARROTS—#100 bunches	14 00 @ 18 00	15 00 @ 18 00
SWEET POTATOES—#1 bbl.	2 50 @ 3 50	2 00 @ 3 00
SQUASHES—#1 bbl.	75 @ 1 25	75 @ 1 00
CARROTS—#1 bbl.	— @ —	2 00 @ 2 50
CELERY—#1 doz.	— @ —	1 37 @ 1 75
Cauliflower—#1 doz.	— @ —	1 00 @ 3 00
PEARS—#1 bbl.	2 00 @ 18 00	4 00 @ 25 00
GRAPES—#1 bbl.	3 @ 12	5 @ 12
CRANBERRIES—#100	— @ —	2 50 @ 3 50
QUINCES—#1 bbl.	4 00 @ 8 00	— @ —

New York Live-Stock Markets.

WEEK ENDING. Bees, Cows, Calves, Sheep, Swine, Total.
October 14th. 8,235 74 2,415 29,816 43,040 85,574
October 21st. 9,552 58 2,270 26,930 44,680 83,488
October 28th. 8,170 60 1,655 27,152 59,476 96,513
November 4th. 8,870 84 1,600 25,559 38,780 74,903
November 11th. 7,471 75 1,403 28,406 46,829 84,184
Total for 5 Weeks. 42,292 351 9,346 137,873 232,505 426,669
do. for prev. 4 Weeks. 39,824 322 10,611 115,789 175,316 341,862

Average per Week. Bees, Cows, Calves, Sheep, Swine.
do. do. last Month. 8,458 70 1,869 27,575 46,561
do. do. prev's Month. 9,956 80 2,632 28,947 43,829
do. do. prev's Month. 9,513 65 2,764 28,668 35,425

Beef Cattle.—The above figures show a decrease of 1500 bullocks per week, as compared with the previous month. Fat native steers have been scarce, while a better grade of Texans have largely taken their place. We

usually expect the largest run of cattle from Illinois, but during the past week Texas has led off. Where this kind of cattle has been improved by the introduction of native bulls, the progeny is very much better. For the most part our markets have been rather tame and inactive, but the close is very firm, with an advance of more than 1/2c. for the week. Appearances point to high prices for prime stock the coming winter. The late horse disease made quite a call for work oxen, and when well-matched pairs could be picked out of lots, they brought much more for work than for beef.

The prices of the past 5 weeks were:

	Range.	Large Sales.	Aver.
Oct. 14.	7 @ 14 c.	8 @ 11 1/2 c.	11 c.
Oct. 21.	7 @ 14 1/2 c.	9 @ 11 c.	10 1/2 c.
Oct. 28.	7 @ 14 c.	9 @ 11 c.	10 1/2 c.
Nov. 4.	7 @ 14 1/2 c.	8 @ 12 1/2 c.	11 c.
Nov. 11.	8 @ 14 1/2 c.	9 @ 13 c.	11 1/2 c.

Milk Cows.—Receipts have been light of late, and the market has improved, milk itself advancing with the cool weather. Very few good cows are now sent to market, farmers preferring to keep them over. The prices are \$35 @ \$50 each for very ordinary to thinish cows of small size; \$60 @ \$75 for fair to good milkers, and \$80 @ \$85 for prime to extra large cows. **Calves.**—As cold weather comes on these are sent in dressed instead of alive, the transportation being less. Live calves are both scarce and high, while hog-dressed sell well. They are in quick demand just now. Quotations for live, \$6 @ \$11 each for grass-calves; \$8 @ \$11 for ordinary to prime milk-veals; 6c. @ 9c. for hog-dressed grass-calves, and 12c. @ 16c. for poor to fat milk-veals. **Sheep and Lambs.**—Now that most of the lambs are in, the receipts are lighter. The only variation in prices from the previous month is that a class of stock has been sent in from frosted pastures which were worth very little there, and still less here. Some of these scallawag sheep and lambs have been sold at \$1.75 @ \$2.25 each. While choice stock, both sheep and lambs, continue in good request, thin flocks move slowly. The quotations are: for sheep, 4 1/2c. @ 5 1/2c. for poor to medium, and 5 1/2c. @ 6 1/2c. for fair to choice, a few extras going at 7c. Lambs take the wide range of 6c. @ 7 1/2c. for mean to thinish lots, and 8c. @ 9c. for medium to extra. **Swine.**—These show quite a gain in point of numbers, and there is no decrease in prices, the demand running very large at present. Being cheaper than beef, there is always an increased call for fresh pork as soon as cold weather sets in. Many dressed hogs are being sent in from the surrounding country. Quotations of live hogs, 5 1/2c. @ 5 1/2c.; city-dressed Western, 6 1/2c. @ 7c. for heavy to medium, and 7 1/2c. @ 7 1/2c. for light. State and Jersey pigs sell at 8c. @ 9c., the latter price for those of less than 100 lbs. weight.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Remitting Money: — Checks on New York City Banks or Bankers are best for large sums; make payable to the order of **Orange Judd & Co., Post-Office Money Orders**, for \$50 or less, are cheap and safe also. When these are not obtainable, register letters, affixing stamps for postage and registry; put in the money and seal the letter in the presence of the postmaster, and take his receipt for it. Money sent in the above three methods is safe against loss.

Postage: on American Agriculturist, 3 cents a quarter, in advance; on *Hearth and Home*, 5 cents per quarter. Double rates if not paid in advance at the office where the papers are received. For subscribers in British America, the postage must be sent to this office for prepayment here.

Bound Copies of Volume Thirty are now ready. Price, \$3, at our office; or \$2.50 each, if sent by mail. Any of the last fifteen volumes (16 to 30) will also be forwarded at same price. Sets of numbers sent to our office will be neatly bound in our regular style, at 75 cents per vol. (50 cents extra, if returned by mail.) Missing numbers supplied at 12 cents each.

Clubs can at any time be increased by remitting for each addition the price paid by the original members; or a small club may be increased to a larger one; thus: a person having sent 10 subscribers and \$12, may afterward send 10 more subscribers with only \$8; making a club of 20 at \$1 each; and so of the other club rates.

The Basket.—On account of the publication of the annual index, the space devoted to "Basket"

and other short items is four pages less than usual. To give the index upon an extra sheet would increase the weight of the paper beyond the proper limit. Fortunately, the questions at this season of the year are not generally pressing, and the large amount of Basket matter that we have in type will be as timely next month as it would be were we able to publish it now.

Read It Over.—After writing a letter read it over, at least sufficiently to be sure that you have given Post-office, State, and signature. One or all of these are sometimes omitted. Always date from your post-office, and not from "Home," "Pleasant Valley," "Prospect Hill," or any other local name.

Costly Pictures.—Some people estimate the value of pictures as they do land—viz., by the acre, or rather by the number of square feet they cover. Hence, large pictures, as a rule, command a high price. Those of cultivated tastes look more to the subject and its artistic execution, as well as to the reputation of the painter. Thus, at Mr. Belmont's sale, Nov. 12th, a painting, by Meyer von Bremen, of two children looking at their sleeping brother, sold for \$1,900. It is about the size of our *American Agriculturist* Chromo, and by the mass of people would be considered of little more value. Another painting, by Jean Louis Ernest Meissonier, of Paris, entitled the Cavalier awaiting an Audience, sold for \$6,050! Yet this is only about the size of the *Hearth and Home* chromo, and probably the majority of people would choose the latter as the more interesting of the two.

The New York College of Veterinary Surgeons.—The recently prevalent horse-disease has done at least some good, as it has called the attention of the public to the need of educated veterinary surgeons. We were quite surprised to read in a paper so generally well informed as the *New York Tribune* the following: "There ought to be an Academy of Veterinary Science, and all that concerns the treatment of that inestimable animal in sickness and in health should be the subject of study as methodical, as patient, and as accurate as that which is exacted by the College of Surgeons or the medical schools of France and Germany." Now, this is what we have had for years. The New York College of Veterinary Surgeons, on Lexington avenue, has an able corps of professors, and offers admirable facilities for a veterinary education, and we wonder that young men should in such numbers enter the already overcrowded medical profession while there is a demand in every community for skilled veterinarians. It is not too much to say that the prompt and constant labors of Drs. Liautard, Large, and others of the college did much to abate the fatality attending the recent horse epidemic.

Mr. Sisley's Pelargoniums.—Since our announcement of Mr. Sisley's good fortune in obtaining a double white Pelargonium, *Aline Sisley*, persons have written him from this country in relation to it. Mr. S. is an amateur, and does not deal in plants. He has placed his stock of the double white and some other fine doubles in the hands of M. Aléatière, Horticulteur, Lyons, who sends us a catalogue of prices.

The New York Weekly Tribune has long been an institution. As a record of news, as an exponent of progress in the various departments of science and industry, and as an index of current literature it has no equal among papers of its class. While its circulation is already enormous, the publishers take the proper means to increase it by setting forth its claims in our advertising columns.

Immigrant Laborers.—"E. T." Mobile, asks where he can procure families of immigrants for farm laborers and to do housework. A vast number of persons would like to know this, ourselves included; but there are difficulties in the way which seem insuperable. Immigrants may be procured, but in almost every case which has come to our knowledge, either they don't know anything at all, or shoemakers or townspeople who don't know a cow from an ox happen to be gotten, or women perfectly helpless in a house, or if they are good for anything, many have not sufficient honesty to work out the money advanced for their passage, and leave as soon as they find a place where they can get higher wages. We see no help but in organized action of those interested to send an agent and procure the right sort of immigrants, and pay them on their arrival as much wages as they can get elsewhere.

Union Pacific R.R.—In October, 1872, there were over twenty thousand acres of land sold by the Union Pacific R.R., at an average price of \$4.50 per acre. The total sales by this company amount to 650,000 acres, very nearly. Thus the great West is filling up.

Michigan Agricultural College.

This, the oldest, and in many respects the best of our agricultural colleges, sends us its catalogue, which indicates that the institution is enjoying a well-deserved prosperity. For information, address Richard Haigh, Jr., Sec'y, or Prof T. C. Abbott, Pres't, Lansing, Mich.

Canada Queries.

A correspondent at Montreal, whose name we can not make out, asks if it would pay for him to plant an orchard. For this we must refer him to local experience. It is difficult to give lists of apples for a particular locality. Among the hardest varieties are Red Astrachan, Sops of Wine, Duchess of Oldenburg, Early Joe, Tollman Sweet, Fameuse, St. Lawrence, Wagener, Pomme Gris, Golden Russet, and Northern Spy. Trees usually come into profitable bearing in 6 or 7 years. Stable manure, at "reasonable rates," is better for nearly all purposes than concentrated manures.

The California Vintage.

The circular of J. M. Curtis informs us that owing to the late cold spring and severe frosts in April, the vintage may be set down as fully twenty per cent less than the average.

Wire Fence.

A. Hance & Son, Monmouth Co., N. J., writes us of what they know of wire fences as follows: As to fence wire, we would advise, after a very satisfactory experience of twenty years, No. 8 annealed. One pound will measure fifteen feet. We use five strands for cattle, and use No. 7 for the middle strand; posts six feet apart, end post well braced and secured; wires tightened whenever required by a cheap apparatus similar to that used in cording a bedstead.

Smutty Wheat.

"Mrs. M. L. B.," Montana. Smutty wheat is not wholesome food for fowls nor for any other animal. Boiling might prevent injurious results.

Feeding Fowls.

"W. N. T." wants to know how much corn would feed 500 fowls for one day, and if it would pay to keep fowls for eggs alone.—The allowance of grain is a quarter of a pint per day per fowl. If they have a good run, where they can get grass and insects, one bushel per head per year is a proper allowance. Our experience has been that fowls kept for eggs alone will not always pay, but when chickens are raised, the eggs pay expenses, and the chickens yield a good profit. But there must be tact and experience.

Management of Horses and Cattle.—"Subscriber" will find Allen's American Cattle and McCure's Diseases of Horses, Cattle, and Sheep valuable books to put in the hands of a manager of a stock-farm.

Corn-Stalks.

"J. F. P.," Fredericksburgh, Va., has 100 tons of corn-stalks; hitherto he has burned them, but is ashamed to confess it; now what can he do to avoid this waste?—No one should be ashamed to confess his faults, but confess, repent, and learn better. There is a better way which has been frequently pointed out by the *Agriculturist*, which is to cure them and feed them to stock. This may be done by throwing them to the cattle in a yard or pen, when the finer portions are eaten, and the rest trampled down into manure; or, which is far better, cutting them up, wetting and sprinkling them with bran or mill-feed, when they will be eaten up clean. Horses, cows, and oxen will eat and thrive upon such food, if the stalks are well cured.

We repeat, that no one is bound to notice a letter which has no proper signature. We also repeat that we never print a name when the writer indicates that he would not like to have us do so. Sign letters whatever you please, but give us also the real name and place if you expect us to attend to your requests.

About West Point.—In reply to "J. R. W.," Portland, Me., candidates for admission to West Point must be between the ages of 13 and 21. They should be prepared for examination in the ordinary branches of English education, preparatory mathematics, and United States history. Appointments are made one from each Senatorial district and ten at large. The course is five years, and appointments are made as vacancies occur. Inquiries as to vacancies, etc., should be made of the Senator from your district.

Plants Named.—"G. A.," Stanhope, Prince Edward Island. Your plant is *Sonchus arvensis*, or Field Sow-Thistle. It is one of the weeds introduced into the United States and Canadas with grass and other field seeds sent from Europe. The plant is best eradicated by plowing the land in the fall, thoroughly harrowing it, and putting in some crop which requires careful cultivation; or the land may be allowed to remain idle during

the summer, and plowed and harrowed at least once a week during the season. . . . A. E. Treadway, Havre de Grace, Md. No. 1. Is *Tristeum perfoliatum*, commonly known as Feverwort, or Horse Gentian; No. 2, *Euphorbia polygonifolia*, or Shore Spurge, a very common plant along the Atlantic coast. . . . "H. H. B.," Pleasant Green, Va. It is impossible to name grasses from leaves alone; either send them in flower, or with ripe seeds. Your other plant is a species of Aster, probably *Aster Tradescantii*. It is necessary to send the whole plant, or at least the flowers and root leaves, in order to determine asters accurately, as there are upwards of fifty species in the Northern States.

Agricultural Schools.

The general failure of the efforts to make agricultural colleges what they were designed to be, seems to have turned the ideas of private parties towards attempting something which may take the place intended for them, or at least do their work. We understand that Thomas Judd, a wealthy farmer of Illinois, has about completed arrangements for opening an industrial agricultural college, in which practical and scientific studies shall be open to young men and women. A farm of 160 acres of land will be attached to the college. Competition is said to be the life of business; it may also help our agricultural colleges.

The "Eternal Corn."

A highly intelligent lady who has a somewhat rare knowledge—for a lady—of stock and other agricultural matters, made use of this expression in a conversation with us the other day. It was an apt expression. Our corn crop has become so immense that the inquiry, What will we do with it? becomes exceedingly apropos. Corn is worth ten cents a bushel in the far West. At such a price it had been better not to have raised it, for there is no profit in it. But what shall we do about it? Feed it! is a general recommendation. And this, though at present in most cases impracticable, must at some time be done. How to do it must be studied out, and the way learned as soon as possible, for it won't do to raise corn to burn always.

The Bluffton (Mo.) Vineyards.

Established in 1867 by a stock company, under the direction of Mr. Husmann, of Missouri, with some 1,500 acres of land, and many buildings and other improvements, which have cost over one hundred thousand dollars, have been sold lately under mortgage. The present owners now offer the entire property for rent for a long term of years. These lands are known to be very superior for grape and fruit-growing.

Chickens without a Mother.

"J. W. B.," Carlisle, Mass., is troubled with lice on his young chickens, and asks: Can chickens be taken from the hen as soon as hatched, and reared successfully? And if so, how?—There is but little difficulty in hatching chickens artificially, but the trouble begins when it is undertaken to rear the brood. Our correspondent had better get rid of the lice, and leave his chicks with their mother. Sprinkle the nest freely with sulphur, and give the hen herself a dusting two or three times during her sitting.

How to Get Early Clover.

Top-dress it with manure in the fall. It would have been better earlier, but may yet be done. The manure protects the plants and enriches them at the same time.

How many Rows on an Ear of Corn?

"E. N. H." asks what is the largest number of rows of corn on an ear we have seen or know of.—We have raised corn with 32 rows on an ear, but believe we have heard of more. Have any of our readers?

No Milk.

"S. T.," Morristown, has a young Alderney cow, with her second calf, which has no milk. With her first calf, she gave bloody milk out of one teat, and dried up in two months. He thinks this is an unusual case, and asks if she would be likely to milk if she had another calf. We never met with so bad a case, in a cow at least, and fear that she would never be worth keeping. Can any one advise him what to do?

How to Renovate an Old Apple Orchard without Plowing.

We have only space to answer this question briefly. Prune judiciously, and manure heavily. Do not put the manure round the trunks of the trees, but spread it all over the ground. Ashes, leached or unleached, are excellent; so is lime or bone-dust. But superphosphate and nitrate of soda would probably act quicker than any other application.

The Cotton States Association

Fair.—The Cotton States Association comprises some of the most active business men in Augusta, Ga., and vicinity. It has near the beautiful city of Augusta ample grounds, which are well arranged and tastefully orna-

mented, and offer every facility to exhibitors and spectators. Its fair was held in October last, but as the weather was adverse, the result was a pecuniary loss. There were many interesting things exhibited, and though some departments were less full than usual, the show of stock was remarkably fine. Some animals exhibited by A. B. Allen & Co., and by Wm. Crozier, both from New York, attracted much attention. The Brahmin cattle, both pure and grade, shown by Mr. Peters, were among the novelties. Of fruit there was a most meager display, but Floral Hall was made attractive by the abundant and tastefully arranged contributions of the President, Mr. P. J. Berckmans. The Association did everything to deserve success, some of the most prominent business men giving their whole time and personal attention to the different departments. We hope that another season fairer skies and a more abundant attendance of both exhibitors and visitors will reward the efforts of the courteous officers.

"PATENT MEDICINES."**Recipe for Getting Rich.**

Get from the medical dispensaries, or elsewhere, any simple stimulating compound or tonic, or take cheap whiskey and color it, adding any cheap stuff to give it a medicinal taste. Adopt any name you choose, the more nonsensical or mysterious the better—one having an Indian, or Japanese, or Turkish sound will be all the better. Employ the glass-blower, or printer, or both, to get up fanciful bottles, or boxes, or labels. Look out that the package, contents included, don't cost over 5 to 8 cents. Assume for yourself a name, as near that of some noted physician as you dare go, and add to the end of it M.D., F.R.S., D.M.D., etc., etc. Write a long story about your great age, experience, and success abroad. Invent 50 to 100 or 1,000 wonderful cures wrought by your medicines, giving names in full, with residences, date, etc., but be careful to not blunder into giving any real name of any person living in the same place. (An improvement is to refer specially to one or two persons, and have an ally at the place, to receive letters of inquiry, and write false letters confirming the story you tell of their being cured.) If you connect with your medicine a touching story about some old mythical person, or Indian, or South American, all the better. These matters arranged, advertise your medicines largely. Print and scatter circulars, pamphlets, and pictures by the ton. Call for agents, and let them give away samples of your medicine, to be paid for if it does good. You may begin in a small way with a few hundred dollars (printing is cheap now), but five or ten thousand dollars or more will make a more brilliant show, and produce large proportional returns. **Result.**—You will reach a multitude of weak, nervous, ignorant people who are slightly ailing, or think they are. They will take your stimulating or tonic preparations, and "feel better" right away. They will believe they have escaped or been cured of some terrible disease (the symptoms of which you should take good care to set forth vividly in your circulars). Henceforth, you have not only a regular customer, but one who will sign your certificates of cure as strong as you can write them, and who will talk up the wonderful virtues of your medicines to others. A dozen of your bottles or packages, costing you less than a dollar for the whole, if given away in any neighborhood, will find you one or two ardent customers, and thenceforth you may depend upon the annual sale of a hundred bottles or parcels, at \$1, \$2, or \$3 each—the price to depend upon the skill you use (or buy of some penny-liner) in writing up the medicines. The druggist of the town, as your "agent," will of course help scatter the medicine if you give a liberal profit. If you set aside three quarters of the receipts to cover cost of bottles, advertising, commissions to retailers or agents, etc., you will still have a net profit of say \$50 a year from each town where your medicine is well introduced. If you only secure 1,000 such towns in the whole country, you still get the modest income of \$50,000 a year! Do you ask, "Is this all true?" We answer, that **this is a fair history of the patent-medicine business**—with the variations of pills which give relief to some cases, and opiates which under the name of soothing syrups, etc., give quiet to young and old babies at the expense of future health. We have several other recipes in reserve to give.

SUNDRY HUMBUGS.

Our newer readers keep inquiring about the trustworthiness of this, that, and the other doctor for various diseases. We answer, that every so-called physician, every medical institute, or college, or association that advertises medicines or medical advice, by circular or otherwise, is a quack—in short, a swindle. The whole tribe of those who advertise "marriage guides," "female medicines," "advice to the young," "errors of youth," "eye doctors," "ear doctors," "consumption-curers," "cancer doctors or medicines," etc., etc., are positively quacks and impostors, to whom it is unsafe to address even a letter of inquiry. . . . A lot

of letters from various places in Texas show that the quack Dr. F. E. Andrews, of Lexington avenue, N. Y., alias Albany, N. Y., is just now vigorously operating in that State with his humbugs, his "Good Samaritan," "American College of Health," etc., etc. "Dr. H. M. Brown," of Albany, N. Y., may be Andrews under another name, or a brother quack. Let them both alone, and burn all their circulars that are thrust into your hands. . . . Five hundred letters of commendation will not whitewash "Rev. Edward Wilson" into anything less than an old swindler. The "Golden Remedies," inquired about by several, are nonsensical quackery. . . . Our Humbug Drawer for this month contains 43 different names of swindlers. The "263 Lottery of the Free City of Hamburg" is a swindle, at least so far as any agency in the U. S. is concerned. . . . The "N. Y. Loan Brokers' Union," R. H. Lewis, manager, 4 Bond street, N. Y., is a humbug, as before stated. . . . Pardee, of Binghamton, N. Y., was still selling his humbug tickets, etc., as late as October 22d. Why don't the good people of Binghamton drive this nuisance out of their midst? They are in danger of getting as bad a reputation as New York. . . . Don't be humbugged into sending money for watches to any but well-known, reputable parties. A large share of that sent to our large cities in answer to circulars is never heard of again, and so much of it as is heard from is poorly recompensed. The stories about failing firms, etc., etc., is all humbug. Good watches, like good gold coin, never go begging customers at half-price. . . . No decent person of common-sense will give the slightest heed to the circulars of C. Sheldon & Co., Hoboken, N. J., or any one of his class who pretend to be such great friends to the married and, inferentially, to the vicious unmarried. . . . To T. E., of Pennsylvania, and others: These various eye-doctors, eye-sight restorers, etc., are merely advertisers of cheap spectacles. Go to the nearest village, and you can try and be fitted with glasses every way as good, at a quarter of the cost, and with more certainty. We are tired of chasing up every advertising swindle of this kind after having looked into merits of a score or more of them, and find them all *de-merits*. . . . To E. H. M., New York: No circular was inclosed. The syrup is doubtless quackery. The swindling fraternity have, in one way and another, got the P. O. address of most persons in the U. S. They sell and "swap" lists of these names among themselves and with quack-doctors, etc. . . . The "Queer" or "Sawdust" swindlers are brisk at work, adopting a great variety of names to deceive the P. O. people, who try to keep letters from those known or believed to be cheats. The fellow operating in this line sends out, among others, the following names as his address: At 34 *Amity street*, N. Y.—H. L. Barnard; K. P. Douglass; Geo. Savory; L. F. Harness; M. L. Keiley; N. L. Werner; F. H. Park; L. P. Benchley; H. J. Keene; Chas. W. Young; K. G. Pott; H. W. Elston; E. S. Hale; L. F. Stark; Elbert Putnam; G. E. Sturtevant; F. P. Walters; G. L. Demey; Ben. L. Crowe, At 609 Broadway.—Col. James Warlow; Thos. Jackson; E. C. Catlin; Otis T. Benzer; S. W. Westervelt; K. M. Walters; Isaac S. Lewis; Edwin Virgil; Arthur Debenham, 190 Broadway. Also Reid, Delafield & Co., 88 Broadway, N. Y., and New Haven, Ct.; David W. Coles, 267 3d ave.; Myron F. Brittle & Co., 30 Bond st.; W. H. Malcolm, 63 4th ave., etc., etc. All the above use essentially the same circulars. . . . We have not room for a lot more of humbugs on hand, but will renew the war upon them in the next volume, and, as hitherto, we expect to shield at least all our readers from swindlers, and through them many other people.

Parsnip Seed.—"C. C. M." Leave the roots in the ground until spring, then dig. Select the best, and set them out to bear seed. If there are wild parsnips in the neighborhood, there is danger that they will cross with the cultivated ones, and deteriorate the seed. This may have been the cause of your trouble.

Evergreen-Trees from the Woods.—W. Oldfield, Canada. Evergreens from the woods need care the first year. Take them up and set them in rows close together, and put over a rough shelter—a rail platform, covered with boughs, and a foot or two above the trees, will answer. Those that survive a season under this treatment, may be set out the next year, and be quite sure to live. You can judge whether it would be cheaper for you to take this trouble, or to purchase trees at the price named.

Cannas.—"L. A. G." Vernon, N. Y. The roots should be dug before the stems are fairly cut down by frost. When the stems are subjected to hard frost, the roots soon decay. We find that the roots do not keep well in the cellar, and shall try them in a drier place.

Borers.—"J. K. B." We doubt the efficacy of any external application after the borer has entered

the tree. They may be of use, at the proper season, to prevent the deposition of eggs. Remove the earth around the base of the trees, and search for the holes. Often they may be cut out with a knife, but if they have entered too deeply, a wire-probe must be used. Sometimes it is necessary to cut the wood away with a gouge, before the grub is reached, but the cutting will not be equal in injury to that done by the borer. Well-rotted stable manure, ashes, or lime are best manures.

Ground-Vinery.—"W. O.," Quebec. We do not know of any one who has tried to grow exotic grapes in ground-vineries so far north, but we think the probabilities are in favor of success. We figured the ground-vinery in June, 1866.

Vinegar Eels.—"H. L. D.," Oswego, N. Y. The so-called eels are worms, and are called by naturalists *Anguillula aceti*. There are several species, some being found in vinegar, some in porter and other fermented liquors, and others in wet moss and moist earth. The only way that we know of, to get rid of them, is to heat the vinegar to the boiling point, but it is not likely that this will prevent others from breeding after a while. The manner of the production and reproduction of low forms of animal life related to these vinegar eels is a subject of scientific controversy, and one too wide for our limits.

Peaches for Canada.—"W. O.," Quebec. Probably no variety of peach will endure your winters, no matter how well protected by evergreens. When the mercury goes 12° below zero, the fruit buds are usually destroyed. You can grow peaches in boxes or tubs, and remove them to the cellar in winter. We can not answer the other question.

Spreading Manure.—"J. C.," Ridgway, Minn., asks if it is best to spread manure direct from the wagon in the fall of the year for plowing in for corn, or let it lie in heaps.—Don't by any means let it lie in heaps, but spread direct from the wagon. It saves labor, and the ground is more equally fertilized.

Cross-Harrowing.—"M. B.," Brush Valley, Pa., sends us a method by which he cross-harrowed his field with only half as much turning of the team as by the usual method. He commenced at one corner and crossed the field diagonally to the opposite corner, turned to the left and returned, then turned at right angles until he reached the edge of the field at his left hand, then returned alongside of his first stroke to the end of it, then turned at right angles until he reached the fence at his left hand again, and so on, going continually round the field diagonally, when he finished at a corner, and the ground had been passed over twice and no hoof-marks were left on the field.

Cord-wood Sticks for Hay.—Those Northern farmers who put sixty pounds of wood in the bales of hay sent to Texas, which the Texan planters think not so kind treatment as they might naturally be led to expect, should remember that though such conduct may be profitable, it is not neighborly.

Lolling of the Tongue.—"L. W. W.," Defiance Co., Ohio, informs "O. C. S." how to cure a horse that carries his tongue out—viz.: Rivet a section of a knife from a mowing-machine on his bit; dull the edges, and make everything smooth. The knife running up in his mouth prevents him from drawing his tongue far enough back to get it over the bit. Carelessness in breaking coils is the cause of it. He has just finished breaking a colt that had this habit. He broke him by taking a strong rubber tape, sewing a buckle on one end, and running it through the rings in the bit and over his nose, tight enough to hold the bit up against the roof of his mouth. He thinks the rubber would not cure an old horse of the habit, although he never tried it; but the knife will prevent it as long as it is used.

Houdan Fowls.—"An Old Subscriber" asks if Houdan fowls have muffs in front of the neck as shown in the illustration of a trio in the *Agriculturist* of March, 1871.—This is indispensable in pure-bred fowls.

Sundry Questions.—"Wm. T. O.," Buncombe Co., N. C., asks as follows—viz.: 1st. What is the difference in value between leached and unleached wood-ashes on a wheat crop? 2d. What is the best way of reducing bones to fine dust where there is no bone-mill? 3d. Is not \$30 per ton sufficient freight on fertilizers for 1,000 miles? 4th. What is the best and cheapest way, and what is the cost, of transporting a mare from Liverpool to North Carolina? 5th. What is the cost of a good drill to sow seeds and fertilizers at the same time? 6th. What is the chemical operation of burnt clay used as a manure for turnips? 7th. What is the rate of import

duty on English farm implements, new or second-hand?—Replies: 1st. Unleached are worth double the leached. 2d. There is no ready way. 3d. If they could be carried in bulk in large quantities, Yes; if not, No. 4th. By steamer to New York, thence by steamer to Wilmington, N. C. The passage costs from \$55, gold, upwards, with fare of attendant, \$80, and feed additional; total, probably not less than \$300, gold, if not more. 5th. \$90. 6th. Potash is released and rendered soluble. 7th. Forty per cent *ad valorem*.

Question for Decision.—"J. D. H." asks the following question: At an agricultural fair a premium is offered for the "best coop of chickens, not less than three varieties, and three of each." The only coop on the ground that contained three fowls of each of three varieties was one with five light Brahmas, four dark Brahmas, and three half-bred Houdans. Was this coop entitled to the premium?—We should say it was, unless the judges, as they sometimes do, reserved the right to refuse a premium when in their opinion the specimens exhibited are unworthy. But unless this is expressly declared and understood, it leads to dissatisfaction and ill-feeling, which should be avoided.

Crushing Bones.—"Wm. A.," Gainesville, Va., wants to know all about crushing and reducing bones for manure, and if a two-horse railway power is sufficient to run a bone-mill.—There was a crusher figured in the *Agriculturist* of November, 1871, which could be run by such a power if the number of stamps were reduced to two or three. The ordinary bone-mills require five-horse power to run them. The methods of reducing bones with sulphuric acid or with alkalies have been so often described that almost any back number of the *Agriculturist* contains one or other equally effective method.

How to Manage a Lot of Calves.—"Young Farmer" has a lot of yearlings, which he wants to feed as cheaply as possible on corn-stalks and corn. He wants information on the subject.—We once fed twenty-four head of calves and yearlings in the following manner: A shed, fifty feet long, was furnished with a feeding trough to which access could be had from the front. The trough was divided into partitions, so that the animals could not crowd each other, and each had a feeding place from which it could not be ejected by the others. Corn-stalks were cut and wetted and mixed with corn-meal and wheat-bran, ground together in equal parts, and salted; and half a bushel per head was fed twice a day. Each animal had two quarts per day of the meal and bran. Plenty of straw was thrown into the shed, and none removed until spring, when there was three feet in depth of well-rotted manure which had not frozen at all, taken out, and which paid for all the feed the calves consumed. Regular carrying, and exercise in the yard through the day when they wished, kept them in good health. We know of no better plan.

Books Received.

The Polytechnic and The Athenæum are both new collections of music, the first containing selections for schools, and the other part-songs for female voices. J. W. Scherhorn & Co. \$1.25 each.

Object-teaching Aids. J. W. Scherhorn & Co., New York, send a catalogue of a great number of curious and useful appliances for the instruction of children.

Monteith's Comprehensive Geography. A. S. Barnes & Co. send us a copy of this new school-book, which has much to commend it to teachers and others.

Hobbs's Architecture. by Isaac H. Hobbs & Son. Lippincott & Co., Philadelphia. A handsome volume, containing a large number of designs in various styles of architecture. It will be found useful to architects and those who intend to build.

Dick's Encyclopedia of Practical Receipts. by William B. Dick, published by Dick & Fitzgerald. This is a compilation of over 6,000 receipts or recipes, covering every branch of art. The value of such a work, like that of a dictionary, can only be ascertained from actual use. The contents seem to be carefully classified, and to be obtained from the best sources, and the whole is presented in a handsome volume of 607 pages.

The Independent Child's Speller. A juvenile book, which teaches a child to spell by the use of script, or writing letters, which allows writing to be taught with spelling. A. S. Barnes & Co., 25 cents.

The Constitution of the United States. with a concordance and classified index. This seems to be a most carefully prepared and useful work. The index allows reference to be readily made to any article or section. The author is Charles W. Stearns, M.D. Published by Mason, Baker & Pratt, New York.

Trapping the Fox.—The article on page 451 was sent us by a correspondent whose name we have lost. He promises us other articles, and we shall be glad to hear from him.

"I find Three Papers enough."—So says one who is fortunately able to supply himself with as many as three newspapers. "I take my religious paper, for of course everybody wants to read about the work of his own denomination; and my local paper, for who wouldn't patronize that? and the *American Agriculturist*, for I must have that, sure. And I find three papers enough."—We commend our friend's selection.

Steaming Food.—"R. W. B.," St. Louis, Mo., says he keeps 1 horse, 2 cows, and 100 hens, and asks what is the best plan of steaming food for them.—We would not steam at all. It will not pay for such a small stock. If thought desirable to cook the food, we would pour boiling-hot water on the chopped hay or straw, and cover it up tight for a few hours. The simplest way to cook meal is to boil the water, and then, while it is still boiling on the fire, stir in the meal, gradually, a little at a time, and let it boil until it is well cooked and converted into pudding.

How to Make Ten Acres Pay.—"R. W. B.," who asks about steaming, also says: "I do business in the city, and live about 10 miles out on a railroad, and am trying desperately hard to make my place of ten acres pay part of my family expenses, but have not had much encouragement yet."—We do not think steaming food for your small stock will help matters. Food is much cheaper than labor. Better devote the time and labor to making the land clean, rich, and highly productive. As a rule, a man can not do business in the city, and carry on a farm or market-garden to advantage at the same time.

The Report of the Department of Agriculture for October contains the usual crop statistics, but these fall into insignificance by the side of an article by the Commissioner himself, upon the "Cultivation and Hybridization of Wheat." The profundity of the physiological knowledge there displayed would amaze us, were we not blinded by the dazzling brilliancy of the style in which it is conveyed. We at home expect nothing better, but what must scientific men abroad think of such stuff as this in an official document? The chemist tells us about zinc tree-labels, written upon with a copper solution, which may be new to him, though not to others. The microscopist informs us that, when weeds and brush-wood are burned, "caustic potash" is liberated. Then there is an account of Prussian experiments in crossing the Zebu or Brahmin cattle upon European stock. The Department does not seem to be aware that such crosses were made in this country years ago, and that grades are still being raised which are highly valued. The Prussian account, allowed to pass without comment, would give the reader an impression that the grades were nearly worthless. But this is a wonderful Department.

A Dry Well.—"J. M. S.," Yonkers, has a well run dry for the first time; what shall he do with it?—Dig it deeper; this is the best season for doing it. Put a wooden curb inside the stone-work, and wedge it tight. Dig the new well of a diameter equal to the lining of the old well until water is reached, when it should be stoned up a foot or two higher than the old bottom. The curb should be removed as soon as the new lining reaches it. It is not probable that the water will fail again.

Pumping by "Clock-Work."—"L.," Brooklyn, Ct., asks if there is any machine of half or a whole horse-power, that could be wound up by a horse, and that would saw wood or pump water or cut feed.—Such a thing is impracticable, for the reason that no power is absolutely gained by employing machinery, and a horse-power would require a horse constantly working to keep it in motion. If power is to be stored up, as in "clock-work," by elevating weights quickly, to run down slowly, it would take 10 horses working one hour to make one horse-power for ten hours, to say nothing of the power lost by friction, so that no gain is made, except in time only. A boy with a taste for mechanics might use clock-work to churn with, for amusement; but for practical use it will "cost more than it comes to."

To Kill Moss on Fruit-Trees.—There is nothing better than carbolic soap and lye. We have used it on apple, pear, peach, and cherry trees with manifest advantage. It will kill every particle of moss or parasitic growth of any kind that it touches. Apply it at any time. Lye alone will answer, but we prefer to add carbolic soap to it. The lye need not be so strong. The poorest soft-wood ashes will answer for making the leach. We use the lye simply as we would water to dis-

solve the carbolic soap—say half a pound of soap to a three-gallon pail of boiling lye. It may be applied to the trunks of old trees while boiling-hot. Use a swab or a large paint-brush. Go over the trunk and all the large branches. It will kill the eggs and larvae of insects as well as the moss, and will greatly improve the appearance of the trees. Try it.

Poll-Evil.—"C. F. K.," St. Joe, Mo., wants a remedy for poll-evil in a young mare.—Apply a poultice of linseed-meal or boiled carrots to the tumor until it suppurates, when it should be washed often with a solution of one dram of chloride of zinc in a quart of water until it heals. It is sometimes necessary to use the knife, but this is unsafe in unpracticed hands. A cloth dipped in tar should be kept over the wound, and a breast-strap should be used instead of a collar.

Feeding Pigs and Poultry on House Refuse.—In reference to an article in regard to feeding pigs on city swill, which appeared recently in the *Agriculturist*, a correspondent at Philadelphia suggests that it might be more profitable to feed it to poultry. Probably the better plan would be to keep both pigs and poultry. In Philadelphia he says there are several parties who do nothing else but collect swill and feed hogs, some to the number of several hundred, and the pork is sold in market at as high a price, and gives as good satisfaction, as any other.

Several Questions.—"Is old plaster as good as that freshly ground?"—There is a very general opinion that it is not. There is no chemical change, and we believe it is just as good, provided it is kept dry and does not adhere together in lumps. "Is salt a valuable manure?"—Sometimes it has a wonderful effect on wheat and barley, and, when cheap, is well worth experimenting with. It is generally beneficial on mangel-wurzel. Average quantity, four to five bushels per acre, sown broadcast. "Is it well to mix salt with guano?"—If salt is cheap, Yes—say 200 lbs. ammoniacal guano and 100 lbs. salt per acre. "Is nitrate of soda as good as nitrate of potash?"—No; but it is far cheaper, and better in proportion to cost.

Water in Turnips and other Roots.—When fresh from the field, common white turnips (the bulbs) contain about 94 per cent of water; Aberdeens, 92 per cent; ruta-bagas, 90 per cent, and mangel-wurzel, 88 per cent. The amount varies somewhat, according to the rapidity of growth, size, etc., but the above figures are not far from the average when these roots are growing in the field or are in a fresh state. After they have been gathered and exposed for some time, they may contain one or two per cent less.

Price of Pure Cotswold Sheep.—A gentleman in Pennsylvania complains of the high prices asked for thorough-bred Cotswold sheep by some of the breeders who advertise in the *American Agriculturist*. He says: "I am asked \$50 for a good ram, and yet two years ago I bought a good one, direct from Canada, for \$25, and will now sell him for \$15. I can only get from \$8 to \$10 for yearling rams."—That may well be. A sheep "direct from Canada," no matter how good he might appear to be, would, in all probability, be at best only a grade, and would be dear at \$25. There are very few breeders of pure animals either in England, Canada, or the United States. What our correspondent wants is a ram "direct" from a responsible breeder, and not from Canada or elsewhere. Fifty dollars is quite a reasonable price for a good, thorough-bred Cotswold ram. Our correspondent would smile to hear a Canadian say he got a Chester White pig direct from Pennsylvania.

Sowing Plaster in the Winter.—When plaster is cheap and the mill is a considerable distance from the farm, and you have no convenient place to stow away the plaster, it is a good plan to draw it in the winter and sow it on the clover at once. If there is not too much snow on the land this can easily be done. Our own plan is to put a boy to drive, and a man on each side the wagon-box, and one behind, and scatter the plaster with a free hand as the horses walk along. We sow two to three bushels per acre. A little of the plaster may be carried off by the melting snow in spring, or blown to the fences with the drifting snow, but not enough to occasion any serious loss. And it is certainly a great convenience to draw plaster on a sleigh rather than in the spring, when the roads are almost impassable, and the fields so soft that you can not take a team on to them without injury.

Lice on Dogs.—Our young farmer friend Harmon, of Ogden, N. Y., who reads the *Agriculturist* and believes in it, is in trouble and thinks we can help him. He has a valuable and favorite shepherd dog that has had

the distemper, and is now troubled with lice. He wants to know how to kill them. Nothing is easier. Get some carbolic soap and dissolve quarter of a pound in a gallon of boiling soft water, and when cool enough to bear the hands in, wash the dog all over with it. Put on some old clothes, get a sponge, and make a thorough job of it, wetting every part of the dog, and rubbing it into the hair. If the work is well done one dressing will kill all the lice, but if after three or four days any lice are found on the dog, wash him again. This is a far better and safer remedy than mercurial ointment.

White Wire-Work.—The useful and ingenious articles made of white wire, described last month on page 425, are made by Woods, Sherwood & Co., Lowell, Mass., who have a patent for the process. As in the article referred to, it was mentioned that the French make articles beautiful in form of comparatively cheap materials, some have inferred that the wire-work was of foreign origin. It is due to Messrs. W. S. & Co. to say that the manufacture is a purely American one, and instead of being imported large quantities of the goods are sent abroad.

Fine Fruit.—The collections of apples and pears from Ellwanger & Barry, Rochester, N. Y., have formed an attractive feature at many of the fall fairs. Messrs. E. & B. not only raise fine trees, but large quantities of fruit of a perfection of form and beauty of color and bloom not often seen at exhibitions. That the beauty of the fruit is more than skin-deep we can attest, having received some samples sent to convince us of the same.

Painting Implements and Machines.—We know of nothing so cheap and so easily applied as crude petroleum. Put on all the wood will absorb. Cover the whole implement or machine with it—wood and iron both. It will keep the iron from rusting. Do not mix anything with it. If you prefer to use a paint, you can get it ready for use at the painter's. Give it time to dry.

Best Food for a Young Pig.—"A. R." There is nothing better than fresh skimmed milk and cooked corn-meal. Stir the hot corn-pudding into the milk, and feed warm, but be careful that the pudding is well broken up and mixed with the milk, so that there shall be no lumps or balls of hot pudding to scald the pig.

Chip Manure.—The chips themselves are worth little or nothing for manure. Better rake them out and burn them. The finer particles are good to spread on the grass in an apple orchard, or it may be used as mulch. We are afraid to use chip manure about pear-trees, as it favors the growth of fungus.

How to Keep Cider Sweet.—A correspondent says: Use only sound apples. Make the cider when the weather is almost cold enough to freeze the apples. Expose the cider during freezing weather, and stir it till the whole of it is reduced as near the freezing point as possible without freezing. Then barrel it, bung up tight, and place it in a cellar kept nearly down to the freezing point. As long as you can keep it cold enough it will not ferment, and as long as it does not ferment it will remain sweet.

What Roots to Feed First.—The White Strap-leaved turnip and similar varieties should be fed first, then such kinds as the Yellow Aberdeen. The different varieties of Swede turnip or ruta-bagas should not be fed until after the former kinds are gone. They are in their prime from February to April. Mangel-wurzel and other beets should be reserved to the last.

Bean Straw.—If well-cured and free from mildew, the pods and leaves of bean straw make excellent fodder for sheep and cows. If you have only a little bean straw do not feed it all out at once, but reserve it to feed occasionally, by way of a change.

A New Agricultural Implement House.—Mr. George W. Carr and Mr. J. W. Hobson, for a long time with R. H. Allen & Co., have established the firm of Carr & Hobson, for the purpose of carrying on the agricultural implement business at 56 Beekman st.

Christmas-Tree Rosettes.—There are several devices for decorating Christmas trees, and none prettier than these rosettes. By ingenious combinations of brilliant-colored papers and exceedingly neat workmanship, a very pleasing and ornamental effect is produced, and more cheaply than by most other decorations.

Your Subscription Expires NOW

(unless you have recently renewed it for 1873, or chance to be among the few whose time runs over into next year, of which fact you will be cognizant, without any personal notice from the Publishers).

PLEASE RENEW AT ONCE,

For the following Reasons:

1st.—You will have an early place on the list of those receiving the Splendid Pictures, which are sent out strictly in the order the names have been received.

2d.—If the subscriptions for 1873 are sent in the *first week* in December, it will greatly assist the Publishers in getting the names carefully and systematically upon the mail-books, without calling in additional inexperienced clerks, so that the January number can be mailed promptly before the Holidays.

3d.—It will take no more time to attend to renewing *to-day*, than will be required next week or next month.

4th.—The *American Agriculturist* for 1873 (Vol. XXXII) will in many respects be superior to any previous volume—in engravings, in useful and interesting reading matter, etc.—for all classes.

5th.—Please invite your neighbors to join you in taking the paper. Tell them about the beautiful picture given to each subscriber. See next column.

6th.—If you have German friends, or neighbors, or workingmen, please let them know that the *American Agriculturist* is printed in German also, with the same illustrations, the more important reading matter, etc., besides a Special German Department by Hon. Frederick Münch, of Missouri, and that the German edition is furnished at the same rates, single and club, as the English edition.

7th.—NOW is the *best* time to renew your subscription for 1873.

Free. A MOST BEAUTIFUL CHROMO

Richly worth Ten Dollars; A Perfect Copy of an Original \$400 Painting, by B. F. Reinhart, entitled

"Mischief Brewing,"

PRESENTED

To Every Subscriber to the *American Agriculturist* for 1873.

A Splendid Ornament for every Home.

The above fine gift is completed, and is being supplied as fast as they can be worked (about 5,000 a week), to subscribers in the order the names have been received for 1873. It is a beautiful ornament that will *greatly please everybody*. It is printed in **16** colors, which give the exact shading of the original painting, so perfectly that it is just as good for all practical purposes, and few persons can tell the copy from the original. The last printing gives a canvas impression so perfectly that the Chromo has all the appearance of an oil painting on canvas.

The cost of putting this on 16 stones has been large, but this being done, by printing **200,000** copies, the Publishers are able to present a copy to every subscriber for 1873. It is a perfect Gem, 11 by 13 inches inside the frame.

The Picture will be given to *every* subscriber for 1873 (new or old), whether coming singly at \$1.50 each, or in Clubs of Four for \$5, or Clubs of Ten at \$1.20 each, or in Clubs of Twenty or more at \$1 each. Subscribers in Premium Clubs will also be entitled to it. Any and every subscriber for all of 1873, whenever received, will be entitled to this picture, on remitting the 25 cents to pay for mounting, packing, and postage. The picture will be delivered at the Office, unmounted, free of charge, or if mounted, for 15 cents extra. If to go by mail, unmounted, 10 cents must be sent to cover cost of packing and postage.

It will be mounted on heavy binder's-board, and Varnished, ready for use, even without any frame, or for putting into a frame, for 15 cents extra—that is, for 25 cents it will be Mounted, Varnished, Packed, and sent Post-paid to subscribers for 1873 only.

N. B.—The *American Agriculturist* Chromo will be delivered:

At the Office, **Unmounted, Free.**

" " **Mounted, 15 cents extra.**

Sent by Mail, **Unmounted, 10 cents extra.**

" " **Mounted, 25 cents extra.**

We advise all to have them mounted *before leaving the office*, as in the large quantities we put up, we are able to mount them for

a quarter of the cost of doing it singly, and better than it can usually be done elsewhere.

GET The CHROMO By EXPRESS.

While we can mail the Chromo put up in extra pasteboard cases with safety, it will be better where half a dozen or more go to the same place to have them put in one parcel and sent by express, one person receiving the package and distributing them to others. The cost to each will seldom be more than the postage (10 cents each), and where there are large clubs, the express charges will amount to only a few cents each. Where this is done, only the 15 cents for Mounting will be required.

Hearth and Home

And Its Beautiful

FREE CHROMO.

READ THIS.

While the old *American Agriculturist* is their "first and best love," as it has been for many years past, and while it will still continue to receive the most earnest attention and care of the Publishers, they are, in addition to this, in conjunction with an able corps of assistants, supplying in **HEARTH AND HOME** a first-class Weekly Journal, entirely different from the *American Agriculturist*. It is beautifully illustrated, and filled with a high order of *useful* and *interesting* reading matter for all classes, including a special department for **HOUSE-KEEPERS**, and a most entertaining, instructive **CHILDREN'S** Department, filling two illustrated pages or more, and which in its extent and quality stands unrivaled, and forms a distinctive feature of **HEARTH AND HOME**. (This is under the special care of Mrs. Mary E. Mapes Dodge, the authoress of "Hans Brinker," etc., and one of the most popular writers of the time.) That the Publishers are meeting a public want is evidenced by the fact that **HEARTH AND HOME** has already risen to a circulation equaled by very few other Weekly Journals in the entire country, and it has for some time past increased more than twice as fast as at any previous period—and this, too, in the midst of the absorbing presidential campaign.

Edward Eggleston, whose *American Stories* of the "Hoosier School-Master" and "The End of the World" have been so popular that tens of thousands of copies in book form have been demanded by the public, has a *New American Story* far advanced, the first chapters of which will appear in **HEARTH AND HOME** the first of this month (December), and be continued in that Journal. It promises to far surpass Mr. Eggleston's previous popular stories. It is founded on facts, and its scene is laid in one of the newer North-western States, during the Immigration fever and Land Speculation of a dozen years ago, and aptly illustrates Western life and society in some of its striking phases.—It will be finely illustrated.

But, while **HEARTH AND HOME** itself, as large, valuable, and as finely illustrated as it is, is supplied at the *low rate* of \$3 a year, the Publishers are

happy to announce that they will have the pleasure of **presenting to Every Subscriber for 1873** a most beautiful and artistic copy of a large, **CHARMING PAINTING**, which is *every way equal* to the European copies sold for **\$20 GOLD**, each. (Those happening near the Office are invited to call and see the picture.) It will be a most **beautiful Ornament for Every Home**. The two Chromos supplied with the *American Agriculturist* and **HEARTH AND HOME** will not only give great pleasure, but they will be more ornamental to every dwelling containing them than many Oil Paintings which have cost Hundreds of Dollars. Yet \$4 pays for both Journals from now to January 1st, 1874, including both Chromos. All new subscribers to **HEARTH AND HOME** for 1873 arriving early in December will receive the remaining numbers of that Journal for this year, including the first chapters of Edward Eggleston's New Story, *without extra charge*.

The **HEARTH AND HOME** Chromo will be delivered at the office free of charge, beginning some time this month, in the order in which subscriptions have been received for 1873. If to be sent by mail, unmounted, 20 cents will be required for packing and postage. It will be carefully Mounted on strong Binder's Board, and Varnished, ready for use with or without a frame, for 30 cents. We repeat: **HEARTH AND HOME** Chromo will be delivered

At the office, **Unmounted**,.....Free.
 " " " **Mounted**,.....30 cents extra.
 If sent by mail, **Unmounted**,.....20 cents extra.
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We advise all to have them mounted *before leaving the office*, as in large quantities we are able to have them mounted for a quarter of the cost of doing it singly, and better than usually done elsewhere.

Wherever practicable, it is best to have the Chromos mounted at the office, and then have them go by EXPRESS. If several persons unite and have all their Chromos sent in an express parcel to one of their number, they will save the 20 cents postage, as the cost by express will be but a few cents each, depending upon the number that go to one place; and pictures of this size ought to go by Express whenever convenient.

Worthy of Everybody's Attention.

The fine Premiums offered on page 469 are well worth looking into. Over **14,000 Persons** in all parts of this country, in British America, in Australia, in the Sandwich Islands, in South Africa, and elsewhere, have each obtained one or more of these valuable articles, with little trouble, by simply collecting a list of subscribers. This has been done by many Children, by many men in all pursuits and professions, and by a large number of Ladies. See "A Good Paying Business," on page 468.

A GOOD HOLIDAY PRESENT

for your wife, or your best friend, will be easily obtained by collecting at once a club of subscribers, and thus securing a desired article from the Premium List on page 469. Hundreds have done this annually for many years past.

\$66.67 to \$100.00 worth of Engravings for One Cent.—At least **\$10,000** will be expended in procuring pleasing and instructive *Engravings*, of fine quality, for the *American Agriculturist* during 1873. Every subscriber will have a neatly-printed copy of each of these, in the pages of the paper, in addition to all the carefully prepared information given in the reading columns. This will give \$66.66% worth of engravings for every cent of cost at \$1.50 a year; or \$80 worth to those in clubs of four to nine at \$1.25 each; or \$83.33% to those in clubs of ten to nineteen at \$1.20 each; or **\$100 worth for each Cent**, to those in clubs of twenty or more at \$1 each. **In addition**, every subscriber will be presented with a perfect copy of Reinhart's beautiful \$400 painting, "*Miss Chief Brewing*," which will be a charming ornament in any home—a picture so much like the original oil painting that none but experienced artists will be able to detect the difference.

Bee Notes for December. — By M. Quinby.

We have a little more anxiety about wintering our bees than heretofore. If the lesson of last winter is not lost, instead of a calamity, we may yet be able to call it a blessing. We shall investigate closer than before, and if we get a correct idea, we can expect to ward off all fatal consequences. It was thought that we were pretty well acquainted with all the phases of winter management. But we find that a season like the last will affect bees as they have not been before in forty years. It was not the extreme cold so much as the length of time it was continued. The strong wind blew through every crack. The fatal dysentery was attributed to various causes. Probably there was not one case produced in the absence of protracted cold. With the experience of the last season in view, we can make preparation for winter with confidence that all will be right. Watch the weather a little closer. Arrange so that the bees may be warmed at any time, if occasion requires. Everything should be in readiness to put the bees into winter quarters the first severe weather. If put in the house, and if the number of stocks is less than fifty, even in a small room, they will hardly, in a winter like the last, keep each other warm, unless adjoining a room with a fire, or in a cellar, under a room with fire. They would hardly keep up the requisite heat of themselves with less than 100 stocks. A large number of box-hives in a room should be inverted—movable-comb hive should stand right side up—as it is possible to get up too much heat as well as not enough. Let the room be perfectly dark.

The number disposed to keep bees in the open air, will be much less than heretofore. But last winter taught us that housed bees were not safe without artificial heat. Many, with a few bees, can not afford the expense of a special room or cellar for winter quarters, and would like to know how best to dispose of them, with the least trouble compatible with safety outdoors. I examined some apiaries last spring, that had been in the open air, that were in comparatively good condition. The hives were brought together and a row placed near the ground, and straw packed between the hives, under the bottom and on the top. The second and third rows were packed on these, and a good thick packing on the back of them. The place was sheltered by surrounding hills. The front side of the hives was exposed to the sun, that occasionally warmed them a little. When they can be sheltered from the cold winds, such a situation is a good one. If the sun is warm enough to melt the snow, allow the bees to fly; otherwise keep just the entrance shaded, allowing the sun to shine on the other part of the hive. The weather must be very mild when third, and even second-rate stocks can stand safely out of doors. Bees not housed need frequent attention, to keep the ice from closing the entrance. The moisture from them that condenses on the side of the hive in frost, may pass off through holes in the top, slowly, without freezing, if the cap is filled with some absorbent material. With a proper degree of heat, the liquid portion of their food probably passes off in the form of vapor, leaving the more solid part as feces, which can be retained until occasion offers for flying out and voiding them. But when the colony is kept a long time in a cold state, the warmth of the bees is insufficient to drive off the liquid portion, which accumulates in the form of feces so rapidly that the bees can not retain, and they leave the cluster in the hive, during severe weather, to void it, very often besmearing each other and the combs. When bees and combs are badly soiled, the bees become greatly reduced, and are seldom worth anything. This state of things must be prevented by keeping them warm occasionally, if not continually. It may be necessary to bring them to a warm, dark room for a few hours. If the hives in the open air have any passages large enough for mice to enter, cover with wire-cloth, leaving

room for only one bee to pass at once. Set traps for mice. About twenty-five pounds of honey will be required to keep a strong colony of bees until May 1st. If there are doubts about the weight of honey, the stock should be weighed, and subtract the weight of hive, bees, etc. It is too late to feed to best advantage, such as are short of the required weight now. Ten pounds will probably last a colony until the first of March. After that time—if healthy—they will require more. Bees, when fed in cold weather, must be kept warm. Let them be so warm that a bee can leave the cluster and go after the feed, without becoming chilled. For feeding, make a syrup of four pounds coffee-crushed sugar and one quart of water, and one teaspoonful of cream of tartar, or its equivalent in vinegar, to prevent graining; scald and skim. If disposed, the feeding may be done now, but the room in which they are fed, should be kept warm.

The Great Wheat Region.

One of the most notable discoveries relating to the economic value of the "Great West" is that of the existence of an immense territory, including the head-waters of the Missouri, specially adapted, by characteristics of soil and climate, to the growth of wheat. This territory stretches from Minnesota westward to the Pacific Ocean, with here and there an intruding, intervening strip of mountain range. Northwest it extends far into the territory of the Dominion of Canada. Part of this immense tract of country has been known for many years as a wheat country, and has been well settled, principally by Scotch and Canadian farmers. Their settlements, generally known as the Red River settlements, have been thrifty and successful, although heretofore far removed from what we have been used to call civilization. The country south of these settlements, alike rich and fertile, enjoys a climate equally salubrious but more genial, and lies within our own boundaries. It is now rapidly settling by farmers who find their way thither by means of the Northern Pacific Railroad, by which all this vast tract is being made available to the settler. Wheat is the great staple of this portion of the country, although other crops usual in the West are raised successfully. But wheat is the crop most easily raised. The samples brought hither of last year's harvest are excellent. They show a splendid head, with grains of extraordinary size and weight. Crops of 40 bushels per acre, of grain weighing 66 pounds per bushel, are said to be of ordinary occurrence, and this is not doubtful, after seeing the quality of the grain. The climate and soil are also well adapted to roots, and we know from personal experience that this is a perfect grass country. Having wheat, roots, and grass, cattle and sheep, dairy products, meat, and wool inevitably follow. There needs but population to bring about the fullest fruitfulness of result, and this is rendered possible and desirable by the rapid completion of the railroad, which will cause all this hitherto silent and neglected territory to soon hum with a diversified industry.

Tim Bunker on Self-sucking Cows.

"What ye gwine to du with that 'ere keow," asked Seth Twiggs, as he poked his head over the wall where Jake Frink was busy tying the cow's head to a bar-post.

"I'm jist gwine to put the confounded critter into a bag to see if I can't keep her from stealin' her own milk. Never had sich a beast afore in all my life. I do't her of Kier Funk, up in the White Oaks, and ought to have known better, for he allers cheats me in hoss trades. The slippery skunk told me that she was a cosset

ceow raised by his wife, and would give her weight in milk every month, and keep fat on't. The knavish scamp wern't fur from right—for she sucks herself dry every chance she can git, and Polly has been on the keen jump ever sense I bo't her to git a drop for tea. If I keep her head in the stanchions I can get the milk, but ye see if I turn her out she does her own milkin'. A mighty ekernomical ceow that!"

"A ceow in a bag!" exclaimed Seth, as he knocked the ashes from his pipe and drew out

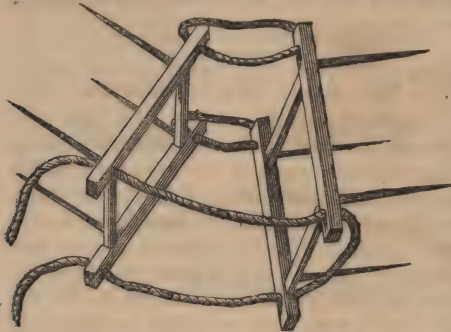


Fig. 1.—UNCLE JOTHAM'S POKE.

his tobacco-pouch to load again. "I have heern of a pig in a poke, but a ceow in a bag is the latest fashun."

"Jess so," said Jake. "Ye see, it is one of Polly's contrivunsis to save the milk."

Jake tried this plan of curing the White Oaker's cow for a week, and all Hookertown came to see the cow in a bag. It was a big piece of sacking tied on just back of the fore-shoulders and under the belly, covering the cow's bag, and leaving the rump and tail free. But Polly's contrivance did not work well. The cow would sometimes get her nose through the canvas, and when she failed to do this, she would lie down and double the canvas over the teat, and suck herself through the strainer.

"Take that thing off," said Uncle Jotham Sparrowgrass one morning as he came up the street. "I've got suthin' they used to use over on the Island forty years ago, and it was never known to fail. It is kill or cure, I assure you."

Uncle Jotham's poke was fig. 1: Two frames of white-oak, armed with half-inch iron rods sharpened like hatchet-teeth. The frames bound upon each side of the neck of the cow with ropes.

Jake tried this establishment for a couple of weeks. It saved the milk effectually, but it drew blood. If the cow attempted to get her head toward the tail, it pricked her severely.

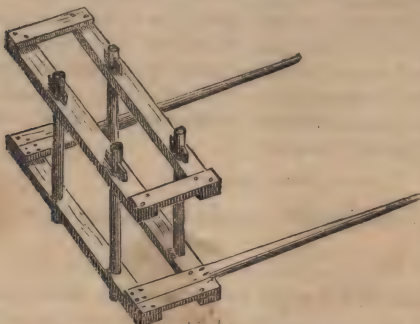


Fig. 2.—G. W. TUCKER'S POKE.

The flies were troublesome, and every time she threw her head round to drive them off she wounded the skin. Polly said this thing would not answer in Hookertown, even if it did on the Island. She thought Long Island folks must be heathen if they tortured their cows in that way.

George Washington Tucker was the next doctor to prescribe for Jake's cow.

"You see, Jake," said Tucker, "that are thing is agin Scripture, for 'it's hard to kick agin the pricks,' and the ceow won't give milk long that is goaded in that way. I can fix you a poke in about an hour that will keep her from sucking jest as well as them spikes, and not hurt her a bit."

So Tucker took Jake's saw and auger, and from some slabs and a pair of worn-out ox-bows he constructed fig. 2. The top frame slips off easily, and the uprights are fastened in place by a wooden peg or bow-pin. The cow's head is fastened in this frame, and the side-pieces come just back of the fore-shoulder, so that if she attempts to get at her bag she gets a smart punch in the ribs, without breaking the skin.

"Now," said Tucker, after he had put on his machine, "that is what I call a persuader of a merciful sort. Tell Polly I'll pay for all the milk that 'ere ceow sucks after this."

This thing worked well, and Jake had peace until Benjamin Franklin Jones came along one morning, and hailed Jake: "Are ye gwine into the lumber business, Mr. Frink?" looking at the poke as if he saw a lumber-yard.

"Wal, neow," said Jake, "I'll allow there's considerable wood about the machine, but then it duz the work, and 'handsome is that handsome duz.'"

Seth Twiggs happened along at this juncture, and seeing by the smoke which way the wind blew, asked: "Have ye got plenty of fencin' stuff, neighbor? I've got a stack that wants a yard round it, and rails is skase on my farm."

Jake Frink grew restive under these pleasantries of his neighbors, and had about made up his mind to drive the cow back to the White Oaks, when Deacon Smith dropped in, and said

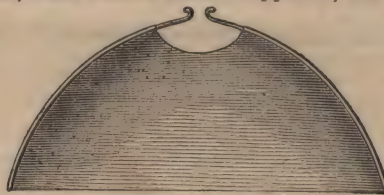


Fig. 3.—THE DEACON'S JEWEL.

he thought he could help him out of his trouble. He had a contrivance that he never knew to fail. He said it was much used up in Berkshire County, and it was the cheapest and best remedy he had ever seen.

So the Deacon took out his pencil, and made a picture like fig. 3, and told Jake to go down to the tinman's and have a jewel made just like it. When it hangs in the cow's nose it looks like fig. 4. It is simply a piece of tin cut out in half-moon shape, and bound on the edge with a wire. The wire is cut and bent over at the two ends for the purpose of slipping it into the nostrils of the cow. If she attempts to suck, the bit of tin is always in the way. She can not get her tongue over nor under the tin. It is not in the way of feeding, for the ground raises the lower edge of the tin and it slides along before the cow's nose. This is a sure remedy, and is much better than carrying a lumber-yard upon the neck, or the barbarous practice of slitting the tongue. It is a very convenient article to put upon a calf's nose when he is weaned, and turned out to grass with the herd. He is about as effectually cut off from his mother's milk as if he was in a separate pasture. They may be made of sheet-iron, tin, or zinc. They cost but little, and it is but a moment's work to put on the jewel or take it off.

I am surprised to see by your last paper that there is one man left who does not know where Hookertown is, and thinks you may have been

gassing people for the last twenty years. This is the biggest joke you have printed in a year. Sally burst out laughing when she read it, and said she thought the school-master hadn't been around where that man lived. For his benefit, I want to say that there isn't a five-year-old boy in any of our schools but could tell him just where the place is. It is just five miles south of the White Oaks, and there are three



Fig. 4.—THE COW ORNAMENTED.

guide-boards at the cross-roads on the way. It is two miles east of Shadtown, and there is but one turn out, and there you keep the main travel.

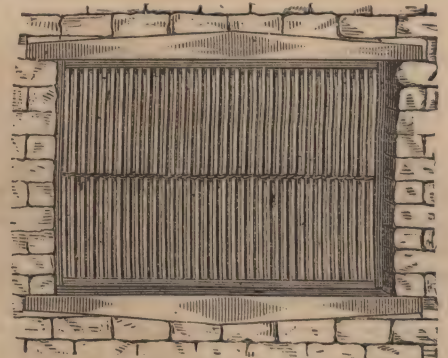
Yours to command,

TIMOTHY BUNKER, Esq.

Hookertown, Ct., Nov. 10th, 1872.

The Striped Bass (*Labrax lineatus*).

The great value of the Striped Bass as a food fish, and its high price in winter, have led to some experiments for growing it in confined waters where it could be taken at pleasure and marketed. In summer, when the fish bites freely, and is taken in our rivers in seines and nets, it is sold at wholesale quite cheap, so that the fishermen do not average more than six cents a pound. In winter, the price goes up to twenty-five cents, and the market would take a much larger quantity if they could be furnished. The spawn has never been taken, that we are aware of, but the young fish, weighing from a few ounces to a pound, are caught in pound-nets in immense quantities along the coast wherever these destructive engines are not interdicted by law. The small fish are not desirable for market, and are sold cheap. These fish, from a half-pound upwards, can be bought for five



SCREEN FOR BASS POUND.

cents a pound or less, and put into an inclosure that admits the tide, and there fed regularly until they are fit for market. This inclosure may be of any size that suits the convenience of the fish-grower. The only essential things about it are that it should admit the tide-water with its abundance of sea food, and shut in the bass. It should be near the house, that it may be protected from poachers. Any small bay of a half-acre or more, or the mouth of a small brook that runs into tide-water that can be easily

dammed and screened, will serve. Almost every estuary furnishes a multitude of little bays that could be used as pounds for raising this fish. A bulkhead of stones or plank is made across the narrowest part, leaving a channel three or four feet wide for the water. The channel should be filled up to low-water mark, or a little above, and a screen made of strong iron rods be put in the channel, as shown on p. 450. This screen consists of a frame of 2 x 3 joists, three feet long and two feet high. The iron rods are five eighths of an inch in diameter, and the space between them is three eighths of an inch. It is desirable that the water should be eight or ten feet deep in some parts of the pound, and that there should be a regular flow of the tide, both to admit food and to keep the water cool in summer. If the water is shoal, and the tide does not come in, the fish will suffer from heat, and some of them will die. If the water is kept fresh and cool, a large number of fish may be kept in a comparatively small inclosure. They may be fed with any kind of fish or fish offal, daily, or two or three times a week.

Along the shore where the menhaden fishery is prosecuted, this fish makes the favorite food. Bass eat voraciously from May to October, and then go into winter quarters. They grow quite rapidly in these pounds if well fed, and growth is mainly a question of food. A four-pound bass will in three years reach the weight of eighteen pounds. Every one can see that this industry must be exceedingly profitable in the shore towns, where there are the requisite facilities for making the inclosures and procuring the young bass and their food. There is not only the profit of the growth of the fish, but of the increase of price, which is not infrequently quadrupled in winter. The menhaden can be bought at the fish-works and from the boats for from one to two dollars a thousand, weighing from five hundred to a thousand pounds, according to condition. This cheap, unmerchable fish is transmuted by the bass into a table luxury that sells readily in winter at twenty-five cents a pound. The business is not yet organized or transacted on a large scale, but enough has been done to demonstrate its feasibility. Nothing as yet has been done for the protection

of this fish. It is hunted by all methods and at all seasons of the year, and its numbers are greatly reduced. There ought to be laws passed in all the sea-board States prohibiting its capture in rivers during the spawning season—say from June 1st to July 15th. If they could have

unlucky woodchuck from its tenement, which is enlarged to a size that will admit his body.

He is the cunning thief who makes such havoc among the inmates of the poultry-yard.

In ancient times the Fox was represented in prose and poetry as a model of craft and cunning, and at the present day he fully sustains the reputation for sagacity that was accorded to him of old. His sense of hearing is so acute, his sense of smell so delicate, that to take him in the hunt or catch him in a trap requires considerable skill and knowledge of his habits. So instinctively cautious is this animal that it is with difficulty he can be induced to approach a trap, even when baited with the choicest morsels. It is smell more than any other faculty which seems to guide him, and so



STRIPED BASS.

six weeks' close time they would rapidly multiply and soon be restored to their former abundance.

Trapping the Fox.

The well-known Fox belongs to the genus *Vulpes*, of which there are several species, differing but little in their habits and characteristics.

The Red Fox of America (*Vulpes fulvus*) is the common fox of this country. This species is widely distributed, and in some localities quite numerous. The fox burrows in the ground,

excessively keen is this sense that he will detect the work of the human hand unless skillful efforts have been made to hide its presence.

The method adopted by the most successful fox-hunters is to set the trap in some spring or small rill, thus covering up or washing out with water the traces which are the occasion of so much caution on the part of this sagacious and highly-sensitive animal. Taking a hoe, the trapper proceeds to some small stream, ascends it, walking in the water, to find a convenient place to commence his work. A place is selected as

near as possible to where the fountain springs from the earth; it will be less liable to freeze on the approach of cold weather, and will be less affected by the rise and fall of water. With the hoe the banks of the stream are excavated, making a pool some four feet in diameter, and from three to five inches in depth. No more earth is removed in digging than is absolutely necessary; all turfs and clods are pushed beneath the water, and the whole made to assume an appearance as natural as possible. This pool is called by trappers "a bed." If made several days before wanted for use, so much the better.

Returning in the stream for a distance of five



FOX-TRAP.

where the young are born in early spring, some four to six in number. The remains of birds and animals killed by the mother-fox are often found scattered near the entrance.

These burrows are seldom dug by the fox himself, his usual practice being to eject some

or six rods, in the same manner as the bed was approached, the trapper prepares for setting the trap. First the bait is carried between forked sticks, and placed in the center of the bed, a third part or more remaining above the surface of the water. The trap should have a small

Returning in the stream for a distance of five

clog of heavy wood attached to it by a chain, twenty inches in length; when set, a dry brittle weed-stalk is placed beneath the pad, with the ends resting on the jaws for a support. It should then require a weight of about two pounds to spring the trap. When ready, the trap is placed between the bait and the adjacent bank of the bed; the clog is stowed away as most convenient. Both, however, must be entirely covered with water.

Now comes the most difficult part of the whole process—to cut a turf of a diameter a little less than the distance across the trap, and of a thickness equal to the depth of water over the pad. It must be cut from firm sod, circular in form, where the grass is short. It will not do to touch it with the hands, but proceed in the same manner as directed for bait. When placed evenly on the pad, the work will be complete.

A fox coming near, scents the bait; he walks around the bed, but can not reach the coveted treasure from the bank; and as he dislikes to step into mud or water, he steps upon the turf so cunningly arranged to aid him in his efforts, seizes the bait, and the next moment has a foot fast between the jaws of the trap.

If skillfully set, the first fox that comes along will be taken; sometimes several days will elapse before there is a capture. A heavy rain does much towards washing out any traces left by bungling hands. The skillful trapper is very particular about his bait. In selecting this important requisite, it should be borne in mind that the fox is as fastidious in his tastes as any epicure, though sometimes driven by hunger to coarser fare. Poultry of all kinds is his special delight, and he will run the greatest risk to obtain it. The carcass of the muskrat is to him a great rarity, and from its musky odor is probably the best bait known. He has also a remarkable fondness for a cat, the body of which is often used for bait by trappers. Choice pieces of any kind of meat may be used in the absence of other bait.

Mice are caught by the fox, and eaten with avidity. A few grains of strychnine inserted in the body of a mouse placed near the haunts of the fox, is the usual mode of poisoning—a dangerous and objectionable method of taking game. No animal intended for bait should come in contact with the naked hand after life is extinct. Cut into pieces of two or three pounds' weight with an ax, it should then be carried between forked sticks.

Walks and Talks on the Farm.—No. 108.

"I tell you," says the Deacon, "farmers have worked cheap this year."

"I suppose," replied the Doctor, who, though city-born, has had charge of a country church for some years, and knows something of the trials of farm life, "I suppose you can not get up a strike! I have often thought that farmers work harder and for less compensation than any other class with the same amount of capital and of equal intelligence."

This is probably true. But it should not be forgotten that we run no risk with our capital. We get a low rate of interest, but our principal is safely invested, and is steadily rising in value. In the mean time, we have a home and many of the comforts of life. Let us be thankful. It is no use complaining. We can not strike for higher prices. It would do no sort of good. And hard as we have to work, and poor as is our pay, I can not but admit that American

farmers, as a whole, are as well off as any farmers in the world.

"We are fortunate in one thing," said the Deacon. "Apples bring nothing this year, and we have none to sell!"

One thing is certain—we can not get extravagantly high profits from any one product for any length of time. It soon gets understood, and enough people will embark in the business to bring down prices to their proper level—and generally as much below the level as they rose above it. A well-managed apple-orchard has been more profitable for some years past than any other farm crop. I have no doubt apples will always be a good, paying crop in this section, but it is not to be expected that they shall be so very much more profitable than other products. The fruit-growers that will make the money are the men who set out the best varieties, and give their orchards the best care and treatment. There is no error so wide-spread and so pernicious as the idea that *easily-grown* crops are the most profitable. From the very constitution of things this can not be true. Were I a young man, and about to set out an orchard, I would select the choicest variety I could find, and the one which required the highest culture. And I would aim to carry this same principle into the selection and management of all the crops and animals on the farm.

"I have had bad luck with my Bates stock," said a young Shorthorn breeder to me a few days since; and he went on to give me the particulars. This cow would not breed, and the calf of another was sick, and another died, etc., etc., etc. This is precisely what I should expect. It is absurd to expect that an animal bred for rapidity of growth and early maturity should be as hardy and breed as readily as an animal that has no other object in life but to propagate its species. I wish this matter was understood. It is no argument *against the breed*. If I offer to sell you a barrel of choice Northern Spy apples for \$5, you might say: "I do not want them. They cost too much. I can buy Baldwins and Greenings cheaper."

But it would show a sad confusion of ideas if you should say: "I do not want them. They are very difficult to raise. The trees are a long time in coming into bearing. They need much pruning, and the land must be deeply drained and made very rich, the bark kept free from moss or the apples will be specked; and when the trees do commence to bear, they bear too much, and the fruit is small, insipid, and poor. To get good specimens, you have not only to give the trees the highest culture, but you must thin out the fruit, and take special pains in picking and packing the apples to avoid bruising their delicate skin."

You would say to such a man: "Here are the apples—large, fully matured, high-colored, free from specks, and of the choicest and highest quality. Eat one. It is the best apple in the world. What you say may be a good reason for not buying Northern Spy trees, but is no argument against buying Northern Spy apples."

And so it is with high-bred Duchess Shorthorns. If they are difficult to raise, that may be a reason why you should not engage in breeding them. But it is no reason for not buying them. If you could show that they were of little use after you had bought them, that would be a good reason. But the evidence is all the other way. The Duchess Shorthorns are kept for the purpose of improving other tribes of Shorthorns, and these in their turn are used for the purpose of improving common cattle. Universal experience sanctions their

use for this purpose and proves their value. This principle applies to all our thoroughbred animals. No one should engage in their breeding unless he is prepared to bestow more time, thought, care, and labor on their management than on common animals. If faithfully, honestly, intelligently, skillfully, and perseveringly carried on, there is money, pleasure, reputation, and honor in the business of raising thoroughbred stock. But where one man succeeds ten fail. And I believe it is owing in a good degree to a misapprehension of the principles here alluded to. Paying high prices for choice animals and then leaving them to the care of common hired men will not insure success. And it is to me one of the most encouraging features of our agriculture that so many young American farmers are turning their attention to this matter. I get a great many letters worded somewhat as follows: "I am a young farmer of limited means, but I read the *Agriculturist* and other papers attentively, and am satisfied that we need better stock, and I would like to know what I can get a pair of choice thoroughbred animals for?" Depend upon it, that "young farmer with limited means," but with unlimited energy, will be heard from. He will attend to the stock himself, study the principles of breeding, and bestow the necessary care and attention, and in a very few years he will carry off the ribbons at the County and State Fairs.

The Deacon smiles at this kind of talk. He is clear-headed, and is prepared to accept the truth when he sees it, but he is as yet only half-convinced. I have great hopes of him, but it is not an easy matter to drive new ideas into an old head!

Perhaps I ought not to say it—perhaps I am not free from blame myself; but it seems to me that agricultural writers do not discriminate as closely as they should. We have too many *half-truths* in our agricultural literature. I know two or three popular writers who are great sinners in this respect. They have not the patience necessary to a thorough examination of a subject, but content themselves with presenting crude, undigested, one-sided notions. They dabble in science, but quote scientific men only so far as they agree or seem to agree with their own preconceived opinions. They allude to "practical experience" in the same spirit. They have great respect for it as long as it favors their views, but utterly ignore any facts that are opposed to them.

While I was at the State Fair three dogs killed two of my Merino sheep and one thoroughbred Cotswold. One of my neighbors took his gun and followed the dogs home, and shot all three of them. The owners of the dogs threaten to commence an action-at-law to recover the value of their property. In the mean time, I propose to sue the owners of the dogs for the value of the sheep killed. If I can recover anything like what the sheep were worth, it will have a good effect. It will, I hope, convince some of my good neighbors that keeping a lot of half-starved dogs in the vicinity of a valuable flock of sheep may be an expensive luxury.

"Can you tell me," writes a correspondent at Camden, Miss., "why spring pigs are more subject to disease than fall or winter pigs? Such seems to be the fact, not only in my own experience, but also of others in this neighborhood." Perhaps it may be that the spring pigs do not get old enough and strong enough to stand the

hot weather or the system of summer management at the South. In my own experience I have never observed any difference, except that we usually lose more young pigs in the spring than in the fall. This is attributable to the fact that the weather is colder in the spring than in the fall, and the little pigs are more likely to get chilled. At the West, farmers who let their hogs follow the cattle in the cornfields object to fall pigs as not being strong enough to stand exposure to cold storms, etc. The breeders of the large Butler County hogs in Ohio do not, I am told, let their sows have pigs in the fall. They only allow them to have one litter a year, and that in the spring. This is one reason why they raise such large hogs.

But the butchers and packers do not want large, coarse hogs. Provided they are fat enough, they will pay the most for a fine-boned, small pig that does not weigh over 350 or 400 lbs. There is a great demand for bacon to send to England, and for this purpose especially pigs should be fat, but not too large and coarse. If our pork and bacon commanded as high a price abroad as the English and Irish bacon, we should now be reaping a rich harvest. With our cheap corn, we ought to beat the world in the production of choice hams, bacon, pork, and lard—and we shall yet do it. But we must give up talking about "big" hogs, and aim to raise those of the finest and best quality.

The last number of the Irish Farmers' Gazette, in its report of the Dublin market, says: "There was a fair supply of bacon and hams; demand fair; old cleared out. Fitch bacon, new, 73s. to 76s.; Middles, new, 80s. to 82s.; American, 40s. to 46s." How do you like the figures? The Irish bacon, if I understand aright, is quoted at double the price of the American. The American sells for less than nine cents and the Irish for over seventeen cents per pound in gold. And you must recollect that if our bacon advanced eight cents per pound in Dublin it ought to advance eight cents per pound in Iowa or Kansas. This additional eight cents per pound is worth striving for. We talk and think a good deal about the demand in England for American wheat, but the demand for and price of our pork attract little attention from farmers. We have exported so far this season over 250,000,000 lbs. of bacon, pork, and lard.

A Western farmer asks me: "Why is it that farmers as a class have no price for their goods, like merchants, mechanics, lawyers, cobblers, etc.?" They have. A farmer sells his corn for the market price, just as a grocer sells his sugar. He can not get more, and need not take less. A lawyer, after years of hard study and much patient waiting, gains a great and deserved reputation, and can command his own price. So a farmer who has spent years in improving a breed of cattle, sheep, or swine is often able to fix his own price. Think of an American-bred Shorthorn bull being sold in Great Britain the other day at auction for 1,650 guineas, or, with gold at 113, \$9,397 in American currency!

"Why," he continues, "should the sons of the soil be the ignorant dupes they so often are, and be subject to the 'tricks of the trade,' and why should traders live more expensively than farmers? Is there no balm in Gilead?" If farmers are "ignorant," that is a sufficient answer to the questions. I know a good many that are not ignorant. An average farmer is as intelligent as the average merchant. There are rascals in the city who will cheat if they can, and farmers sometimes are their dupes. But all the cheating is not confined to the city. I

have known farmers to tie up dirt in their wool, and put wet or damaged hay in the middle of the load. I know a farmer who lost over fifty dollars last year from putting wind falls in his barrels of winter apples. When I first moved on to this farm, although I am farmer-bred and farmer-born, and have lived on a farm nearly all my life, yet it was known that I had been editing an agricultural paper for some years in the city, and was consequently supposed to be "green," and a fit subject of the tricks of country sharpers. Every horse within a dozen miles that was spavined, or broken-winded, or blind, or balky was trotted out for me to buy. If a cow kicked, or had lost a teat, or was a poor milker, the owner, though half-a-dozen miles off, would think that she was just the cow to sell to me. If a flock of sheep had the footrot, it was thought desirable to give me a chance to cure them—without, however, telling me what the trouble was. Every blacksmith, carpenter, wheelwright, mason, and stone-wall builder in the neighborhood deliberately cheated me, and then made his boast of it to a crowd of admiring listeners at the country tavern. I never go to an auction sale, because I know the auctioneer, himself a farmer, will bid against me on the sly, and cheat me if he can.

I do not wish to say hard things about my neighbors. Nine tenths of them are as honest, intelligent, industrious, sober, peaceful, respectable, kind-hearted people as any to be found in the world; but among the other tenth you will find men who, according to their ability and opportunity, are as thorough-paced scoundrels as you will find in Wall street. There is amongst them as much low-bred cunning, as much vulgar shrewdness, as much lying and profanity, as I have ever happened to meet with in the city.

As to "why traders live more expensively than farmers," I know of no good reason except that they have more ready money and spend it more freely. Poor men as a rule are more extravagant than rich men. A farmer with a farm and stock worth \$20,000 may not have more than \$2,000 pass through his hands in a year, while his brother in the city, an enterprising man that enjoys a good reputation, but with no more actual capital, may, by the aid of discounts, indorsers, and credit, use more than one hundred thousand dollars a year in his business. He takes greater risks, and may sooner or later lose everything, but in the mean time he makes larger profits and lives more expensively than his brother in the country. To make great profits you must run great risks. The farmer runs little or no risk, and makes comparatively little profit. For my part, I prefer to be a farmer; if you would rather engage in other business, I have no sort of objection.

Farmers are making small profits. There is no doubt about that. But it is useless to complain. It seems hard for a farmer in Illinois to be obliged to pay 45 cents for sending a bushel of corn to New York, and then sell it for 65 cents. But there is no law to compel him to send it. He had far better convert it into pork, or beef, or mutton, or wool, or cheese. It would be better for him, and better for us poor farmers at the East who have corn to sell, and who can not get as much for our corn as it costs us to raise it, owing to the market being flooded with Western corn. Our policy at the East should be to buy all the corn we can use to advantage, while the policy of the Western farmer should be to sell as little as possible.

The one central fact that deserves the thoughtful consideration of farmers everywhere is the

advance of wages throughout the world. It means an enormous increase in the consumption of cheese, butter, beef, mutton, and pork. The first effect of this increased demand for meat will be felt here in the cheese and pork market, because cheese and pork can be shipped to any part of the world. But it will also cause an increased demand for beef and mutton. Our aim must be to produce the *best quality* of meat, and then it seems to me there will be no limit to the demand. We must introduce better breeds, and feed more liberally.

Corn to-day is the cheapest food in the market. I think many farmers are making a great mistake in selling cows at such low prices. They are making a still greater mistake in wintering them on such poor, innutritious food. Why not give them four or five pounds of corn per day? Less hay, and more corn and straw, is my motto for the present winter.

This summer my horses got badly run down. We fed them liberally, but they did not eat well. They had no appetite, no digestion, and no strength and spirit. They came home at noon and night fagged out, and their night's rest did not refresh them. I sawed a barrel in two, and placed the ends on the platform of the pump. These are for watering the horses. Into one of them we put a pailful of corn-meal and mixed it with the water. The horses at first did not like it, and would only drink a little when very thirsty. After they had drunk what they would they were allowed pure water. In a very few days, however, they drank this corn-meal soup with a relish, and in less than a week there was a decided change for the better in the appearance of all the horses. We do not let them eat the meal, but merely let them drink the milky water. I have no doubt it is as good for them as a plate of good soup is for a tired and hungry man before dinner. It seems to stimulate the appetite and aid digestion.

It is a capital thing for cows as well as horses, but it is not so easy a matter to give it to the cows, as they soon learn to stick their heads in the water almost up to their horns to get the meal that settles at the bottom. It is necessary to have a large trough with a false bottom.

This is my last Walk and Talk with the readers of the *American Agriculturist* for the year 1872, and there are a great many things I want to say, but have not time.

I want it understood, however, that my faith in good farming and my respect for good farmers grow stronger and stronger every year. I still believe in summer-fallowing on clay land, and am satisfied that fall-fallowing is a good thing. I believe that weeds can be killed, and am making considerable headway against them. My corn is the best and my corn-stubble the cleanest I have ever had—better and cleaner than the Deacon's! I think we plow too much land, and do not plow our land enough. We must have cleaner land. We must raise bigger crops, or there is no profit in farming. We must keep better stock, and feed more liberally. We must make more manure, and, what is still more important, we must make *better* manure. And we must take care of what we do make.

HAVE YOU PURE WATER?—Water is as necessary to the comfort and health of stock in the winter as feed; and if they are to be kept free from disease an ample supply of it, free from ice, snow, or filth, must be furnished them.

A Barn for Mixed Farming.

"J. F. G.," Highland Co., Ohio, says: "I want a barn for mixed farming, for storing hay and

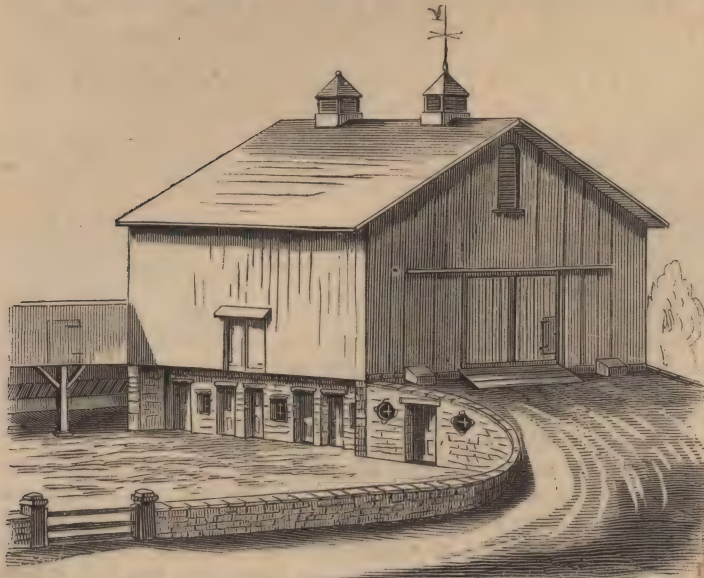


Fig. 1.—ELEVATION OF BARN AND STABLE.

grain, and for keeping stock; I want all the labor-saving improvements, and also a root-cellar in a convenient place, and a yard for manure." This is a general want, and the importance of a well-arranged barn to the comfort of the farmer as well as to the comfort and well-being of the stock is very great. We give on this page an engraving of a barn which has been found very convenient by the writer for his own use, with all the plans necessary for laying out the stables, sheds, and other accessories. Its cost will be from \$1500 to \$2500, according to price of materials and the amount of finish put upon

cellar, which should be two or three feet below the surface, to fill in the ascending road-way. The stable-floor is thus on a level with the ground, and windows on each side furnish ample light and ventilation. The foundation-walls are of stone, sunk three feet below the surface. Drains from the bottom of the foundation would be found of great use in keeping the stables perfectly dry at all seasons. Below the ground the walls may be built of dry work, but above the surface the best of mortar should be used in the building. Much of the solidity and durability of a building depends upon the excellence of the mortar. The stable-walls are built so that the barn overhangs the entrance-ways six feet, which

gives protection against rain or snow, as well as prevents drifting of either into the open upper half of the doors or windows, thus permitting ventilation in stormy weather, and allowing comfortable access from one door to another. The plan shown in figure 2 gives the arrangement of stalls and passages. *A B* is the horse-stable, with two double stalls and a loose box for a mare and colt. *C C* is the cow-stable, with stalls for 22 cows, arranged so that the animals' heads in each row are towards each other, with a central feed-passage between. *D D* are ventilators and straw-shoots, which carry off through the cupolas on the top of the building all the effluvia from the stables, and by which straw for bedding is thrown down from the mows or barn-floor above. *E F* are compartments for calves or a few ewes with early lambs which may require extra care and protection. *G* is the root-cellar, entered from the feeding-room, which also communicates directly with each compartment. *H* is the cistern, sunk twelve feet beneath the floor of the root-cellar, and which receives the whole of the water shed from all the roofs. It is prevented from overflowing by an outlet into the drain, which runs beneath the stable-floor. *I* is the pump in the feed-passage, *J* the shoot by which cut hay or fodder is thrown down from the barn-floor. *L* is the feed-mixing box, or steam-chest, if steaming is practiced, and *M* the stairs to the barn-floor above. On this floor are four bays for hay, straw, or fodder, a spacious thrashing-floor, with a cross-hall for cutting machine, and shoot (*O*) to pass the cut feed below. A door in this cross-hall opens into the barn-yard, by which straw may be thrown out for litter. A door at the rear of the thrashing-floor opens into the upper part of the open shed, where hay, straw, or fodder may be stored. The cutting machine is shown at *K*. *N N N* are grain bins or boxes for feed. *P P* are bays, *Q* the thrashing-floor; *R R* hay-shoots and ventilators, which are carried up level with the plates, doors being made, through which to pass the hay either from the barn-floor or the mows. *S* is the straw-shed, with open traps to pass straw or fodder into the racks shown beneath in fig. 1.

Fig. 1 shows the elevation of the barn, the arrangement of the barn-yard, the doors and windows of the stables and root-cellar. The

shoots for discharging roots into the cellar, and for ventilation, are seen at each side of the barn-door. The open shed seen in the rear of the barn-yard is for the purpose of airing stock in stormy weather, and is furnished with a straw-rack for feeding them. This barn is calculated for a farm of 100 to 200 acres. Exactly such a barn was built for a farm of 90 acres, on which soiling in summer and steaming food in winter were practiced, and was found ample to meet every want for the stock it was made to accommodate. A cart-load of green fodder hauled to the stable was unloaded into a small feed-truck through the window of the feed-passage, between the cows' stalls, and was distributed to 22 head in fifteen minutes. The same number of cows could be fed from the steam-chest, by means of

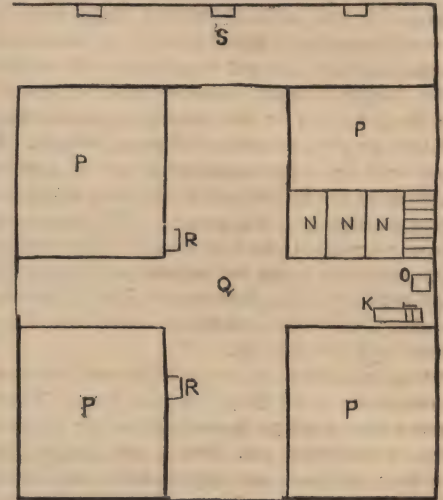


Fig. 3.—SECOND STORY OF BARN.

the same truck, in even less time, if necessary. Such conveniences as this make a comparatively costly barn much the cheapest in the end.

Butter-Molds

In reply to many inquiries made by some of our readers, who can not procure the butter-molds which we described in a former number of the *Agriculturist*, we give directions for making them at home. The difficulty lies in getting the stamp made. Any one who can work a foot-lathe, can turn the mold and the plain stamp with the handle, but the device which ornaments the stamp troubles them. To make this, take a



Fig. 1.—BUTTER-MOLD.

piece of wood free from grain—a piece of soft maple or birch-root is very good—and have it turned or dressed the proper size, and a smooth face made on it. Then either draw on the face, the wrong way (as shown in figures 1 and 2), or cut out letters from a printed bill or newspaper,

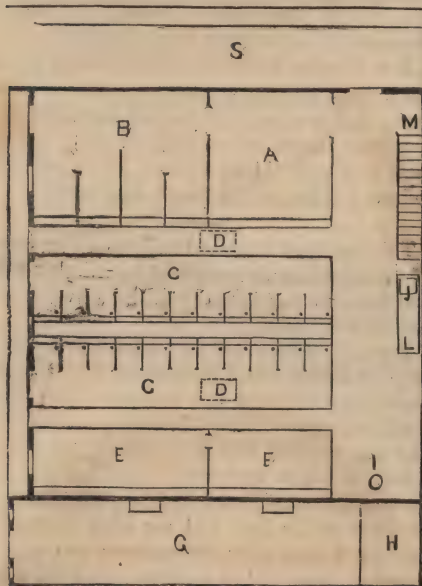


Fig. 2.—PLAN OF MAIN FLOOR OF BARN.

the work. In most places where stone for the lower story and lumber can be procured cheaply, \$1500 will be sufficient to build a barn fifty feet square, including everything needed. This is not a basement-barn. It is not built in a hill-side. Partly underground stables are not generally desirable, on account of dampness, too much warmth in winter, and want of ventilation. But a slight rise of ground which may be availed of for an easy ascent to the barn-floor is a convenience, although not at all necessary. This may be easily made by using the earth from the root-

and paste them on to the face of the mold, *the wrong way*, and make a border to suit the fancy, in the same manner. Then take a small, sharp gouge, like the one shown in fig. 2, not larger than a quarter of an inch in diameter, and smoothly cut away the wood beneath the letters, making them deep enough to show well when printed on the butter. About a quarter of an inch would be right. The depression should be neatly smoothed out, so as to make a neat, smooth print. A pretty border for a mold is a quantity of clover leaves; they may be pasted on, and the wood then cut out as before described, or any other leaves would answer.

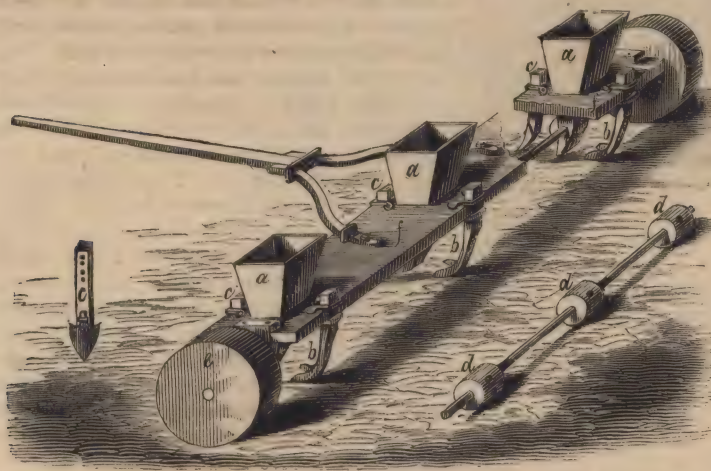


Fig. 2.—BUTTER-MOLD.

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Corn-Planter.

W. C. Detweiler, Northampton Co., Pa., writes as follows: "In 1872, May number of the *Agriculturist*, you give a representation of a corn-planter, and state that by widening the machine it might be made to plant 2 or 3 rows. I have used your drawing as a guide from which to construct one that will plant 3 rows. You will notice by examining the drawing that I dispense with the wheelbarrow frame, substituting



AN IMPROVED CORN-PLANTER.

therefor a frame of oak (or other hard wood) planks, say 2 inches thick and 1 foot wide, also causing the driving wheels to serve the purpose of the pulleys, thus saving labor in constructing the machine, and the annoyance of slipping of the strap. The wheels I think should be 1 foot in diameter, thus causing a spread between the hills of 3 feet by each revolution. (By putting 2 holes in the receiving cups, the wheels might be made 2 feet high, and so on, but I should prefer to have them low, so as to prevent strain on the plows and scrapers.) The plows and scrapers are to be attached to wooden bars, which may be elevated or lowered, and fixed with a pin, so as to plant deep or shallow. I think that we could, with such a machine, by putting several more holes in the revolving cups, plant beans, peas, fodder-corn, etc., and by removing the plows, and attaching them to a cultivator, save extra ones for that purpose.

"I am no farmer at present, but do intend to be one shortly, and as I never intend to patent

anything, I would ask of you to suggest such improvements as you see fit."

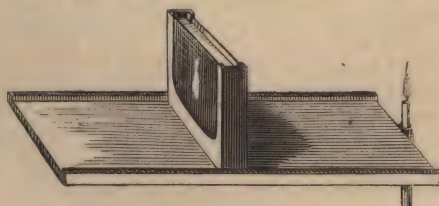
We give an engraving of the sketch sent by our correspondent, which has some very good points. The implement can be made by almost any one who can use tools, and will be found useful where corn is planted in large fields. Eight acres per day could be planted by such a machine. The addition of a roller, to follow the scraper, which covers the corn, would be an improvement, as would also be the enlargement of the wheels to 3 feet in diameter, and the making of three holes or cups in the seed-dropper. If the corn is to be dropped three feet apart, one cup in the seed-dropper will be needed for each foot in diameter of the wheels. The construction is easily seen in the engraving. The hopper for the seed is shown at *a*, the scraper which covers the seed at *b*, the plow which opens the furrow at *c*. A separate figure of the plow is also given, which shows its construction, with the pin-holes by which the depth of furrow is regulated. The revolving cups and the shaft which carries them are shown at *d*, the wheels, made from plank, at *e*, and the frame plank (which is cut away in one place, to show the part of the hopper in which the seed-cups revolve) is shown at *f*. The hoppers should be separated at such a distance from each other, as will bring the rows in the desired position, either 3 feet or 4 feet apart, as the case may be.

Milk-Tester.

An instrument for testing the quality of milk by its density has been used in Germany, and

is of sufficient value to be introduced here amongst those whose business makes it desirable to use such a test. It consists of a small table of wood, with raised sides, one of which is marked with a scale of degrees for ascertaining the comparative densities of different samples. Within the raised sides a wooden frame, carrying two plates of glass, separated a quarter of an inch apart, is moved back and forth. The glass

plates are cemented into the frame with shellac, so as to be water-tight. A spring, which holds a piece of candle of a certain size, is affixed to one end of the table. When pure milk is poured into the space between the glass plates, the frame holding them is pushed into such a position that the light of the candle can just be distinguished through the liquid. It is evident that if the milk should be diluted with water, it will be less opaque, and the in-



MILK-TESTER.

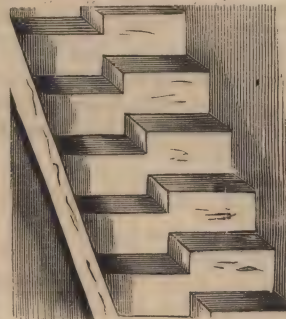
creased distance to which the frame must be moved to render the flame barely visible will

become the comparative measure of the adulteration. If foreign matter is suspended in the milk, its opacity becomes increased, and the lessened distance between the light and the frame made necessary to permit the light to be seen, shows the comparative impurity. Now that the milk question has become one of the leading problems waiting solution, it will be of interest to those whom it may concern to make for themselves one of these simple milk-testers. It is obvious that the candle used in these tests should be always of the same size and power. A piece of wax candle is preferable.

Barn-Stairs.

Barns and granaries are generally so much curtailed of available space, that it is an object

to save as much as possible. Stairs are wasteful of this needed space, and inconvenient and unsafe ladders and other substitutes are very often used in place of them. We give an illustration of stairs for a barn or similar building,



BARN-STAIRS.

which occupy only half the space of common ones. It is seen that the steps are alternate; and while each has only the ordinary rise of say nine inches, yet each step, in perpendicular height, rises double this distance. A great saving of space is thus gained.

Composting Sods.

Being lately in Orange County, New York,



Fig. 1.—SOD-HOE.

we saw a farmer busy doing valuable work, which might at this season be very profitably



Fig. 2.—COMPOST HEAP.

done by thousands of farmers throughout the country. He was making manure. With the tool shown in fig. 1, he was cutting sods in a very rough, boggy meadow, covered with tussocks and coarse grass and weeds. These he was piling up in heaps, with weeds gathered seemingly from his fields and fence-rows, and all arranged in layers, with lime between them as shown in fig. 2. This is quite a common plan in several European countries, and we should judge this farmer was an "adopted citizen," paying for the privilege of his citizenship by giving some new ideas to his neighbors.

At any rate, it is a very useful thing to do, and by spring these heaps will be all rotted down into fine, rich mold, which will make an excellent top-dressing to grass lands or young wheat.

Large Cows, or Small Ones?

It is a question much discussed whether large or small cows are the more profitable, and experiments on the 'subject have not thus far sufficed to decide it. It must depend very much on the purpose for which the animal is kept. Mr. Leander Wetherell publishes the result of Villeroy's experiments, as follows:

Holland cows (Holsteins?) gave 23.92 quarts per 100 lbs. of hay consumed.

Yorkshire gave 27.45 quarts per 100 lbs. of hay consumed.

Devons " 19.13 " " " " " "

Herefords " 15.97 " " " " " "

Jerseys " 26.33 " " " " " "

And he concludes that it has been clearly demonstrated, by careful experiments made at the agricultural schools on the continent of Europe, that the large breeds of cows are more profitable than the small breeds.

Surely the table given above does not establish this conclusion. The Jersey is much smaller than the Devon and Hereford, yet it gives more milk from the same amount of food.

Then, again, if it is the purpose to sell milk only, the test given will do very well; but if butter or cheese is the object, it will all depend on the *quality* of the milk. For instance: Mr. C. M. Beach, of Hartford, Ct., made a careful experiment which showed that (the condition of the cows being the same, as to pregnancy, feed, etc.) he required to make one pound of butter $6\frac{1}{2}$ quarts of Jersey milk, and 11 quarts of "native" milk. By this test, 100 lbs. of hay fed to a Jersey cow would (according to Villeroy's estimate) produce 4.16 lbs. butter, while if fed to a Yorkshire (supposing her milk to correspond to that of our "native") it would produce but 2.49 lbs. Probably the Yorkshire would weigh fully fifty per cent more than the Jersey. In like manner the amount of cheese would depend less on the amount of milk produced than on the proportion of caseine it contained.

The fact is that there is no rule by which we can judge from the size of the animal as to the economy of different breeds or of different individuals of the same breed for any purpose. It will depend on the character of the animal and on the purpose for which it is kept. The best, almost the only standard of comparison will be the actual performance at the pail, at the churn, and at the cheese-vat, and in practice the decision will be most safely made by an experienced dairyman according to the appearance of the cow, and his trained observation of her consumption of food and of her actual production

A Farmer's Savings-Bank; or, How to Manage Manure.

There is a very decided advantage in fermenting manure, provided it is done without loss. It converts the woody fiber of the straw into ulmic and humic acid and the nitrogenous matter into ammonia. In other words, it decomposes the manure and renders it soluble or available. Chemistry and experience agree on this point. Farmers and gardeners know that well-rotted manure acts more quickly than fresh manure; chemistry tells us *why*, and also teaches us that there *need be* no loss of ammonia during the process of fermentation.

It is undoubtedly true that there is often

great loss in keeping manure. This arises principally from leaching. The rain washes out the soluble matter. If the liquid was run on to a meadow or otherwise applied to the land, there would be little loss. But when it runs off into drains or ditches, we unquestionably lose much of the best plant-food of the manure.

The first thing to be done is to spout all the barns, buildings, sheds, etc., and carry off the water where none of it can come in contact with the manure. Some farmers seem to like a wet barn-yard. They think more manure is made. If the object is merely to wet as much straw as possible, there is some truth in the idea. But straw alone makes very poor manure, and letting straw lie saturated with water is not the best way to rot it. We have, moreover, rarely been on a farm where all the straw could not be used up to advantage in bedding the cattle, horses, sheep, and pigs.

NOW FOR THE MANURE.—And we wish we could get all the farm boys that read the *American Agriculturist* to try the plan we have to recommend. We have two boys who "boss" the job on our own farm—and do nearly all the work themselves—and they soon feel a real interest in what we call our "Savings-Bank."

We have in the center of the barn-yard a basin, or hole, with sloping sides. Into this basin the old-fashioned plan was to throw the manure, promiscuously, anywhere, just as it happened, and the result was that for several weeks or months it would form only a thin layer, spread out all over the bottom of the basin. It was too thin to ferment, and had a slovenly appearance. Our plan now is to wheel or cart the manure into one corner of this basin, making a kind of hot-bed of it. Make it four or five feet high, and as you get more manure, increase the length and width of the heap, but always keeping it in a compact mass. It soon begins to ferment and to get warm and throw off steam. This pleases the boys, and *we*, too, like to see it fermenting, because we know, if the heap is properly managed, there is no loss of ammonia. That is an exploded notion. There is water in the form of steam or vapor escaping, mixed with a trace of volatile oils and carbonic acid, but these are of no manurial value.

This little fermenting heap is the "nest-egg." It has an attraction for the boys. They seem to like to clean out the pig-pens and the cow-stables, in order to get manure to add to the heap. They have a horse and cart, and if they can find anything that will make manure, it is drawn to the savings-bank and deposited.

Now, is not this better than having a heap of horse-litter at the stable-door, where it gets so dry and hot as to "fire-fang"? or better than having another heap or heaps on the side of the cow-sheds, where the drippings from the eaves wash out much of the best substance from the manure? or than having the pig-sties reeking with filth? or the sheep-yard so foul and damp that there is great risk of the foot-rot, and no possibility of the sheep doing well?

The great point is to get the heap started. Many a rich man dates his wealth from his first deposit in the Savings-Bank. Once get a little manure into the heap and start the fermentation, and it will keep growing bigger and bigger. Manure scattered about the premises is soon frozen solid, and remains in a crude state until spring. But this snug little heap will not only keep itself warm, but, like yeast, will induce fermentation in the fresh manure that is daily added to it. It will, as we can state from

actual experience, keep fermenting slowly during the coldest weather in winter. But it would not *commence* in such cold weather; hence the importance of starting the heap now. What we gain by this fermentation, we will tell the boys at some future time.

The Shad in Mississippi Waters.

The stocking of the rivers that empty into the Mississippi and into the Gulf of Mexico has ceased to be a problem. We have received a photograph of a shad which was taken from the Ouachita River, near Hot Springs, Ark., April 18th, 1872. It measured 19½ inches in length, and 12 inches in circumference around the dorsal fin. No one acquainted with the fish, we think, can doubt that it is a genuine *Alosa prestabilis*. Dr. Geo. W. Lawrence, of Hot Springs, informs us "that shad were first taken in this stream, so far as he knows, in 1860. Three were caught during the month of April, 1860, in a small wooden trap, erected in the middle of the stream, a few rods below Farr's mill-dam. This dam obstructs the river about eight miles west of Hot Springs. It is the first obstruction found between the mouth of the Mississippi and this place, a navigable distance of over 1000 miles. The Ouachita River empties into Black River, the Black into Red, and Red River into the Mississippi about the eastern center of the State of Louisiana. Farr's dam is at least 60 miles above steam navigation. The trap was built for the purpose of supplying Hot Springs market daily with fresh fish and soft-shelled turtle. Above Rockport the river has a rocky bed and barriers, and is protected in this mountainous part by forest margins. The Ouachita affords shelter and good feeding surface for all kinds of fish. The shad are as delicate and fine-flavored as any that can be found in the Susquehanna River, or elsewhere in the Eastern States. The first fish-trap was destroyed in 1862, and was not rebuilt until after the war. The number of shad taken in the trap has annually greatly increased. The present year shad commenced running early. The abundant rains that fell in April and May, about 7 inches in each month, kept a good volume of water in the river during that period. I was supplied with shad this year from April 5th until May 12th. Wagon-loads of these large, fine fish were brought into the village of Hot Springs, to supply visitors to our famed resort with the luxury of shad from the Ouachita River."

How did this fish find its way into the Ouachita River? It will be recollected by those who have followed the progress of fish-culture in this country, that Dr. Daniells, of Savannah, Ga., transplanted shad spawn from the Savannah to the head-waters of the Alabama in 1848, and that these fish were taken for the first time in the Alabama three years afterward, and that the Alabama and its tributaries are now abundantly stocked. They are also found in large numbers in the tributaries of the Escambia, the first large stream east of Mobile Bay, having, without much doubt, gone into that stream from the Alabama. It is highly probable that the shad of the Ouachita are a delegation from the Alabama. Their complete success in that stream is about as good evidence as we can have that the shad will flourish in all the tributaries of the Mississippi. If they will go a thousand miles through muddy water to reach their spawning-grounds, why will they not go two or three thousand? If they reach Hot Springs in perfect condition, why may they not reach Pitts-

burgh, St. Paul, or Denver? Their distribution by natural methods is extremely slow, as this case shows. By the artificial process it can be greatly hastened, as has been demonstrated in the Connecticut. If Congress will furnish the funds there is very little doubt that all the people of the Mississippi Valley will be eating fresh shad in less than five years.

The Labor Question in American Agriculture.

Indeed we need not confine our discussion to the agriculture of America alone, for the same causes which are threatening the stability of labor in this country, are operating in Europe as well. Their operation is natural, and the causes themselves are to be encouraged and sustained—which makes the problem a very difficult one. The growing prosperity of the world and the more active demand for labor in manufactures and kindred employments, are sufficient to account for much of the scarcity of farm hands, but this might be to a great extent met by an advance in wages, to draw out the idle men from towns, which, though serious, would be of secondary importance, compared to the need of going without sufficient labor at any price.

The real causes of the revolution that is slowly but very surely undermining the supply of farm hands, are the cheap newspaper and the common school. Formerly the man who was contented to work, year in and year out, as hired man on a farm, and had plenty of competitors for his place—the horizon of his life and thought was the “*pays bleu*,” the blue country that bounded on every side the outlook from his township’s hills—and he sought his soundest wisdom at the corner store, and his only suggestion of fancy in the staid sermons at the country church. The few strangers who came at odd times across his vision were too infrequent and too different from his standard of excellence, to awaken any emotion but curiosity or contempt. The district school had taught him only the 3 Rs, and even they had been allowed to fall into much disuse. He knew nothing better than his life, and he wanted nothing better. He was a steady, honest, hard worker, with the sort and amount of common-sense that are needed to enable a man to trundle along through the uneventful life of a country neighborhood; with no knowledge of and no respect for any further intelligence. He was exactly the stuff for a good farm laborer. If he was Irish, he seemed not more disposed to roam nor to dissipate his usefulness in foolish ventures than if he was “native and to the manner born.” Most of us can remember when such hands were plenty, when they were glad to get a good place, and zealous to keep it. Those were good times for the employers, but we shall never see them again.

The later generations of the race have been inoculated with the poison of unrest. The scales have dropped from their eyes, and they have learned the great lesson that the world does not revolve around their own small village, and that there are better men than they in the world, and better opportunities to achieve success and happiness than their fathers dreamed of.

It would be idle to discuss the advantage or disadvantage to the world of this wide diffusion of intelligence—our duty is only to consider its effect on agriculture. It has broken up or is breaking up, in all the civilized world, the old, reliable system of farm labor. Men who take and read a newspaper, and have their

minds stimulated to an interest in the affairs of the world at large, gravitate toward each other, by a natural law, and the towns grow at the cost of the country. Pages might be written about the why and the wherefore of this tendency of men into whose minds the dawn of the new day has broken, but we could not change the fact. Our old race of farm laborers is going to drop away from us, and we must bestir ourselves to meet the new state of things—gradually, of course, as the change will come.

The extension of the use of machinery and artificial power will help us more than we now imagine, and, for one or two generations, we may find our relief in the employment of Chinese, but if we care for the interests of posterity, we must consider some reorganization of our system of agriculture which will allow of a concentration of the workmen into communities where they can enjoy the advantages they crave.

Straw for Bedding.

In some parts of the country straw is so abundant that it is left in the fields where thrashed and set fire to. Even in the wheat-growing sections of this State there are many farms where straw is scattered about the yards all winter for the mere purpose of rotting it into manure. In other parts of the State it is so scarce that the cattle must lie on the bare boards, or be bedded with sawdust or shavings.

We believe there are few farms where straw need be wasted. We propose to say nothing in regard to the demand which exists for it to make paper or for bedding in the cities, except to remark that in some cases it might be more profitable to sell the straw and buy bran or grain rather than to waste the straw at home.

Some farmers seem to suppose that they must get rid of their straw during the winter. We know many farms where straw is thrown a foot deep at a time about the yards in winter and early spring, where not a handful of straw could be found in June! We hope all the readers of the *Agriculturist* will avoid this mistake. There is not a week in the year when straw can not be used to advantage on a farm.

Where straw is fed to horses, cows, or sheep, we would not be sparing of it. Put enough into the racks for them to pick out the best, and use what they leave each day for litter. What we object to is scattering a great layer of straw about the yards two or three times during the winter. Better litter the yards every day where it is necessary. In the case of sheep, there is nothing more injurious than to compel them to lie on a mass of fermenting straw. Sheep are very fond of having a clean bed of straw to lie down upon. We have often observed sheep in winter standing about uneasily, and when a little clean straw was spread under the shed or about the yard they would very soon lie down and chew the cud of contentment.

The great point in littering sheep, then, is to give little and often—the less the better, provided it keeps the sheep out of the mud, and gives them a dry, clean bed to lie upon. A sheep must be very tired before it will lie on a dirty bed. Another point to be observed is either to change the position of the racks occasionally, or to be careful every day to scatter the straw that is pulled out. Unless this is done, there will soon be a thick layer of straw on the side of the rack, which will be liable to ferment.

It is sometimes a great convenience, and we think economical, to cut the straw into chaff, not only to feed, but for litter. We think it

absorbs more liquid, and the soiled portions can be removed more readily from the rest of the bedding, or at any rate with less waste of straw.

Wintering Cows.

An ordinary-sized cow will eat about 200 lbs. of hay per week. In the dairy districts of this State it is estimated that it requires two tons of hay to winter a cow. Where hay is worth \$20 per ton at the barn, as it is where we reside, the expense of wintering a herd of cows take a large slice out of the profits of the dairy. But with us, while hay is comparatively high, grain is cheap, and corn-stalks and straw abundant and of good average quality. Cows also sell for an unusually low price. We do not advise those of our readers similarly situated to buy cows and winter them in hopes of making a good thing out of it by selling them at a high price in the spring. They may or they may not make money by the operation. But we think we are perfectly safe in recommending those farmers who have plenty of straw and stalks not to sell their cows; and if they will need more cows next summer, we think they can buy now and winter them over to good advantage.

A cow will eat say three bushels of chaffed hay per day. So far as *bulk* is concerned, we must not vary much from this standard. In our own case, however, we would feed 2½ bushels of chaffed straw and stalks, half a peck of bran, and half a peck of corn-meal per day. We think a cow can be wintered better and (with us) far cheaper than on hay alone. If you have plenty of clover-hay it may take the place of the bran. But do not try to winter the cows on straw and stalks alone. It is very poor economy.

A New Sensation.—Horse Disease.

If, two months ago, any one had predicted that the streets of New York, Boston, and other cities were to echo to the cry of the ox-driver, and that horses would be for a time removed from the streets, he would have been received with contempt. But nevertheless, in 1872 the unwonted sound has been heard, and the strange sight has been exhibited of express and other wagons slowly moving behind ox-teams, which were urged along by the usual noisy epithets and maledictions of their drivers. A strange disease had suddenly stricken down the greater part of the horses and rendered them unfit for work. It originated in Canada, and in a few days had spread as far as New York and Philadelphia, and it may, before these lines can reach the readers of the *Agriculturist*, have spread south and west over the whole country. If the conditions are favorable, not only is this highly probable, but other stock may be affected also. But it is quite needless that serious apprehension should be felt. Fortunately the disease, although so sudden in its attack and so widely spreading, is comparatively harmless if rightly treated.

Its first appearance is made known by the following symptoms: A depressed condition of the animal, roughness of the coat, drooping head, watery eyes, and disinclination to exertion. On the first appearance of these symptoms, the animal should be cared for, kept dry, warm, and well bedded and blanketed, and fed with slightly-warm bran-mashes, scalded oats, and chopped and moistened hay. A little sweet spirits of niter, or a light dose, say a teaspoonful, of powdered saltpeter, may be given. Some



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SCENES IN NEW YORK DURING THE PREVALENCE OF THE HORSE-DISEASE.—Drawn and Engraved for the American Agriculturist.

of the usual condiments or prepared cattle-feed will be found useful with slightly-warm flax-seed tea or thin bran or oat-meal gruel. If these simple remedies are used at once, the attack will generally pass off in a few days. If, however, through inadvertence or otherwise, the symptoms are allowed to increase in severity, and a copious discharge from the nostrils occurs, with sore throat, cough, and falling off from the feed, cold feet and legs, and fever, more active remedies must be applied in addition to the above-mentioned treatment. The nostrils should be washed often with warm water, in which a little vinegar has been mixed; the head steamed by means of a bag of scalded bran, hung beneath the nose; the feet and legs, after bathing in hot water, should be rubbed dry with woolen cloths; let the whole body be thus rubbed and then immediately blanketed from head to tail, and the patient kept free from drafts in a thoroughly ventilated, dry

stable. Tar should be burned in the stable for a disinfectant; take a small quantity in an iron pot and stir it with a red-hot iron, and allow the smoke to penetrate all through the building. The soreness of the throat may be relieved by rubbing externally with mustard, mixed in milk-warm water, as for the table, and also by placing on the back of the tongue a spoonful of molasses or of honey and vinegar, made as thick as possible. No medicine should be poured down the throat under any circumstances, and no bleeding should be allowed. On fine days gentle exercise is to be given, but no work should be permitted, nor exposure to damp or rain allowed. Rapid recovery should not be injudiciously attempted, nor should work or high feed be hastily resumed, but ample time given for complete restoration to health, before these precautions cease. With them there will be no fear of anything more serious occurring than a few days' idleness.

Our artist has engraved some of the scenes which have been common during the course of this disease in New York and other large cities. The *lightning* express has owed its slower motion to ox-teams, and the accumulation of all sorts of freight would have been greater than it has been had it not been for their needed help. Street-cars have been overloaded until car and horses have both broken down under the excessive loads, and occasionally a poor horse died, not from the disease, but from overwork when feeble and sick. On one occasion a horse-car has been drawn by men at increased rates of fare, and loaded wagons have also been thus drawn along. In the middle of the picture the methods of treating the complaint are illustrated; and on the whole, the scenes depicted—not exaggerated in the least—go to show to what straits we should be brought if we should suddenly be deprived of our patient and absolutely indispensable beasts of burden.

The Maiden-hair Rue-Anemone.

We have several species of Rue-Anemone, commonly known as Meadow-Rue, botanically *Thalictrum*. All of these have very much divided or compound leaves, and flowers without petals, but very showy stamens. The foliage of none of our native species is equal in beauty to that of the European smaller Meadow-Rue, *Thalictrum minus*. This species is found all over Europe and Russian Asia, and is so exceedingly variable that it is not surprising that we find various forms of it in the catalogues under different names. Last spring we received from W. C. Strong & Co., Brighton, Mass., a variety under the name of *Thalictrum adiantoides*, or Maiden-hair Rue-Anemone, so called from the resemblance of its foliage to the fronds of the Maiden-hair Fern. Messrs. Strong & Co. have introduced this as a plant to furnish foliage for bouquets. The leaves have all the delicacy and grace of a fern, while they are much more lasting and much more easily produced. The engraving gives an idea of the form, but well-developed leaves are several times larger than the one from which the illustration was taken. Certainly nothing can be finer for bouquets or other ornamental work than these beautifully dissected leaves. Being a hardy herbaceous perennial, it should be treated like other plants of its class. We grew ours in the open air during summer, and potted it on the approach of frost. It will be kept in a cold-pit until February, and having had a season of rest it will be brought into heat and forced like other plants of similar nature. The flowers of this species are not at all showy, and to get the best developed leaves the flower-stems unless it is desired to produce seeds should be removed as soon as they appear.

The Glut in the Fruit Market.

The year 1872 will long be remembered as the abundant fruit year in all parts of the country. The rains have been abundant, and almost

have been so abundant that the larger part of the crop has rotted upon the bushes. The vineyards in the West have been loaded with grapes, and the growers have found it difficult to market

have jumped to the conclusion that there is no profit in fruit-growing, and that we may as well cut down our orchards. Certainly, we ought not to plant more fruit-trees. This is a hasty conclusion. There is just as good reason for planting orchards, especially of winter fruit, as there has been for the last twenty years. For some years past there have been serious doubts among intelligent men about the possibility of raising apples in sufficient quantity to make them pay. The trees would not bear. The crop of this year must have dissipated all doubt of this kind. The soil has not lost its fertility. The climate is not unfriendly to fruit. It is much to have our faith restored by the bountiful yield of this year. It is also a great good to have fruit so cheap that the poorest families in city and country can enjoy it. It has been so dear, in most years, that laboring men, in cities especially, have felt that they could not afford it. Apples at five dollars a barrel, and grapes at twenty-five cents a pound, were beyond their reach. A great many families have come into the full enjoyment of fruit this year, and will be good customers of the fruit-grower henceforth, as long as they can afford it. There can be no doubt that the market for fruit has been greatly enlarged by the bounty of this year, and the losses of the fruit-growers, so far as they have made them, may be regarded as so much capital invested for future operations. Every market in the country will take more fruit next year at paying prices, in consequence of the abundance of this. Those who have large orchards of winter fruit, of popular varieties, and plenty of storage room, will not lose money even this year. Apples will not be a drug in the market



MAIDEN-HAIR RUE-ANEMONE.

them at three cents a pound. Pears have been so abundant in the fruit-yards of our villages, that it has been difficult to sell them at any price, and for once fruit-growers of a benevolent disposition have been permitted to give to their neighbors freely without any fear of depleting their own purses. Apples especially are so abundant in all parts of the country where

they have orchards, that immense quantities of summer fruit have rotted upon the ground. Trees in old pastures that have been barren for years have hung full. Dusty cider-mills, and presses unused for years, have been put in order, and the familiar squeak of the grinding apples has been heard in almost every rural district. The prophetic symbol of agricultural prosperity has been realized in all parts of the land. The presses have burst

The Mexico Apple.

The illustration shows the Mexico Apple of the natural size of a selected specimen. It



MEXICO APPLE.



MEXICO APPLE—SECTION.

without exception every kind of fruit has done well. The wild fruits, grapes, strawberries, whortleberries, blackberries, raspberries, plums,

out with new wine and cider. What is to be done with all this abundance, and what is the true policy for the future? Some

originated in the town of Canterbury, Ct., and was widely disseminated from the nursery of the Messrs. Dyer all through Eastern Connecti-

cut. It is a fruit of great excellence, and ought to be more generally cultivated. It is the best apple of its season we have ever found. The tree is hardy, a good grower, and, on good soil, very productive. The fruit is of medium size, round, regular; surface bright crimson red, striped darker; dots, numerous, yellow-green. The basin is shallow, regular; eye medium, closed. Cavity acute, regular; stem long or medium, slender. The core is large, open, meeting the eye; seeds numerous, angular, pointed. The flesh is white, tender, fine-grained, and juicy. Flavor, sub-acid. Quality, best; season, August and September. It is a superb dessert apple, worthy of a place in any small collection or fruit-yard.

The Canker-Worm.

The wingless female moth that lays the eggs of the Canker-worm must ascend the tree by climbing up the trunk. All the methods of prevention oppose some obstacle to her ascent, or catch her in the act of climbing. One great difficulty with all these preventives is that they are not put upon the tree early enough. It has been found that the insects ascend very early, even during the warm spells that we often have in February, and that the only safety in sections where they are abundant is to keep the protecting material always ready. Tar has been used, but the following, from our correspondent "Bay State," is much better. He writes:

"Having had some twenty years' experience with the Canker-worm, and during that time having either tried or witnessed the results of the experiments of others, with all the various methods, patented and otherwise, to prevent the female from ascending the trees, I feel that the right thing has been hit upon at last. It consists simply of bands of sheathing-paper, 6 or 8 inches wide, tacked around the trees (same as for the old tar process), and an application of refuse printer's-ink. The ink is now manufactured for the purpose and costs 12½c. per pound. This remedy has been used in Massachusetts three years, and gives general satisfaction. Two to four applications a year are sufficient, and an orchard averaging from four to twelve-inch trees can be protected for an annual sum of *ten cents* per tree. As some evidently know but little of the persistency of the Canker-worm, I thought the above item might be useful."

Hints about Cheap Greenhouses.

BY PETER HENDERSON.

I find so many inquiries coming in at this season of the year about the heating and general construction of cheap greenhouses, that I am compelled to give instructions which are known now to nearly every one in and around our large cities. Yet, simple though the matter may be to us who see so much of it, it is evidently perplexing enough, when they come to construct, for those who have nothing to copy from. Those of us who write on such subjects too often take for granted that those for whom we write know something about the matter, when for the most part they really know nothing.

The cheapest kind of construction is a lean-to (already described by me in the *Agriculturist* for February, 1872)—that is, where there is anything to lean it against, such as the gable of house or barn. But if the greenhouse has to be constructed entirely new, I think the ordinary span-roof is best—see end-section. The walls

are four feet high, formed of locust or cedar posts. To the outside of these are nailed boards—rough hemlock will do, if appearances are not considered. To the boards is tacked the ordinary tarred paper used by roofers—a cheap article, and an excellent non-conductor of heat. Against the paper is again nailed the outer or weather boarding. This makes really a better wall for greenhouse purposes than an 8-inch one of brick, as we find that the extremes of temperature of the greenhouse—inside at 50°, and perhaps 10° below zero outside—very soon destroy an 8-inch solid brick wall, particularly if exposed to the north or west. A wall of wood constructed as above will last for twenty years, and be as good a protection as one of 8-inch brick. So much for the construction of the frame. The roof is formed by the ordinary sashes, six feet in length by three feet in width, which can be bought ready made, or easily be made by a carpenter or any one handy with tools.

Such a house, if cheapness is an object, should be heated with a flue. It should not be



END-SECTION OF GREENHOUSES.—C, Furnace; D, Flue; K, Walk; G, Gutter.

more than 60 and not less than 30 feet in length; if more, the flue would not heat it enough, and if less it would be likely to get too much heat. About 50 feet by 11 is we think the best size of a greenhouse to heat with a flue. The flue should run all around the house—that is, it should start along under one bench, cross the end, and return under the other bench to the end where it begins, making the length of flue in a greenhouse of 50 feet about 110 feet long. It should have a "rise" in this length from the furnace of at least 18 inches, to secure a free draft. For the first 25 feet of flue nearest the furnace it should be built of brick, forming an air-space inside of about 7 by 7 inches. From this point (25 feet from the fire) the flue should be formed of the ordinary drain-pipe cement or terra-cotta. The former is to be preferred, and that of 7 or 8 inches diameter is best. The drain-pipe for flues is now almost exclusively in use here wherever flues are used, and it is found not only to be much cheaper, but better for rapid radiation than brick. The cost of a plain greenhouse so built, complete, in this section, is about \$6 per running foot—that is, one 50 feet long by 11 feet wide costs about \$300.

The use of tarred paper for the walls or drain-pipe for the flues of greenhouses is not given in my "Practical Floriculture."

Hints on Pot Plants for Winter—Cheap and Effective Manure.

People who live in the country have no excuse for being without good food for pot plants. Dead leaves and earth or mold from the woods are always attainable. My advice is mainly for dwellers in cities.

First, make your calculations a year ahead. You who have not been accustomed to make plans for gardening, in-doors or out, for a month ahead, need not be discouraged at this. The amateur and professional florist make their plans for a much longer time. There are very few cities where a bushel or two of dead leaves can

not be gathered in the fall from the many trees that line some streets, or adorn your own or your neighbors' yards; but don't be afraid of getting too many. The older and more thoroughly rotted the manure is, the more valuable, and a bushel or two of leaves will go very far—much farther than you think. Put the leaves in a sheltered place, say against your back wall or fence, and put a board or two over the heap, to shed rain. Then to a bushel of leaves add a peck of loam or garden soil (sods are best), and a half-peck of common sand. Every washing day empty a pail of hot suds on the heap, and stir it as often as possible with a garden fork, hoe, or shovel, or anything else that will mix it up well. Of course, it will freeze up solid many times during the winter, unless kept where it does not freeze, but if you begin now, and stir as often as you can, by next fall you will have the whole thoroughly rotted down. Oak leaves do not rot as quickly as some others, maple, for instance. My heap was begun last October, and you can not now distinguish the least form of a leaf in

the mass. Although out of sight, under a flight of steps at the back door, it is perfectly odorless, and is springy and spongy—just what is needed.

To recapitulate: A bushel of leaves, a peck of loam or sods, a half-peck of sand are all the important ingredients.

Whatever you can add in the way of stray bunches of moss, or bones burned in the kitchen fire and powdered, is so much gain.

When ready for use, sift through your coal-sieve (let it be a coarse one), and take one third of the manure and two thirds of the best garden soil you can get, and make your heap for potting. With very few exceptions all plants will thrive in this mixture, and your courage will not be damped by the formidable array of soils paraded as necessary in most works on flowers. Through the winter you will have flowers that will be the envy of your less energetic neighbors—Geraniums that are Geraniums, Bouvardias and Primroses that no greenhouse need be ashamed of—especially if you have a sunny window. It is of no use to attempt to have winter flowers without some system. Better have none at all than the sickly specimens that disgrace so many windows from November to April.

I do not find in my horticultural reading much said about Geraniums for winter-flowering; yet they will be much more satisfactory, if some of the better varieties are tried, than many other plants chosen. Two years ago I gave a lady friend, living in the country, two cuttings of Geranium—one a bicolor (salmon pink, shaded with white) and the other pure white. She has a little winter sitting-room, about nine feet square, with a window each to the south and west. The south one is devoted to flowers, and it isn't worth while to boast of Geraniums unless you could see hers. The first winter they were less than a foot high, the leaves so thickly set that the stalks were not visible, and the horse-shoe or zone on each leaf almost black. They each threw up one cluster of buds, then another, and another, until finally through the greater part of the winter there were always from one to four clusters of blossoms. And such clusters! Nearly as big as your fist, and each floret as large as an old-fashioned cent. The shape of the cluster was such that the flowers seemed to grow in trusses, like the Hyacinth, and hid the stem entirely. The difference between the summer and winter blooming of the same plants was very marked. Out of doors they bloomed like

nearly all Zonal Geraniums; one half the florets faded before the other half came out. In the window each cluster would keep about three weeks; if one floret dropped, another came out in its place, or the rest pressed together and filled up the gap. Cuttings from these did equally well last winter. They stood on the window-sill, close to the glass. The room had only a wood-fire, and was never very hot—which last item, by the way, is a very important one for your own health as well as for that of your plants. Don't let the thermometer get above 65 or 70° at the most, going down not lower than 45° at night if possible. You can easily accustom yourself to the temperature, and will be all the better for it.

PROVIDENCE, R. I.

G. H. B.

Seedling Pelargoniums.

BY JEAN SISLEY, OF LYONS, FRANCE.

Mr. Sisley, well known as the originator of several choice varieties of double Zonale Pelargoniums, writes to the editor as follows:

LYONS, 16th October, 1872.

Editor of *American Agriculturist*, New York:

You have asked me how I proceeded to obtain the new double-flowered Zonale Pelargoniums, and since then I have received many applications for information from Belgian, English, and French horticulturists, particularly since my friend Carrière, speaking of my double White Zonale in the *Revue Horticole* of 1st October, says that it is the result of scientific combinations. I must decline to accept this encomium, but am very willing to let the horticultural world know my very simple practice, which I have never kept secret. It is not necessary to discuss here the process of artificial impregnation; one familiar with horticulture knows how it is practiced. I will therefore at once inform your readers of my proceedings.

When, six years ago, I began the artificial impregnation of Zonale Pelargoniums, I first procured about fifty of the best varieties of single-flowered Zonale Pelargoniums, selected from the various colorings, and about two hundred plants of the then existing double-flowered varieties. And until 1870 I continued to buy all the new double varieties that were brought out, and all the single-flowered varieties which were of different shades from those in my collection.

Without any preconceived theory I impregnated all the single-flowered with the pollen of the double ones which had stamens.

For three years I did not obtain a seedling worth mentioning, and I was on the eve of giving up artificial fecundation, when in 1869 I obtained Victoire de Lyon and Clémence Royer, which, although not perfect in form, were very different in color from any double Zonale Pelargonium until then produced. This led me to continue my efforts. Since the first year I had kept my seedlings that were alike in shape and color to those in my collection, and rejected the old ones. I proceeded in the same way with the double-flowered, and rejected principally all those that had few or no stamens as useless to me. I had been led to this selection by the idea that single flowers obtained from single flowers impregnated by double ones, might perhaps be more disposed to produce double flowers than the old sorts.

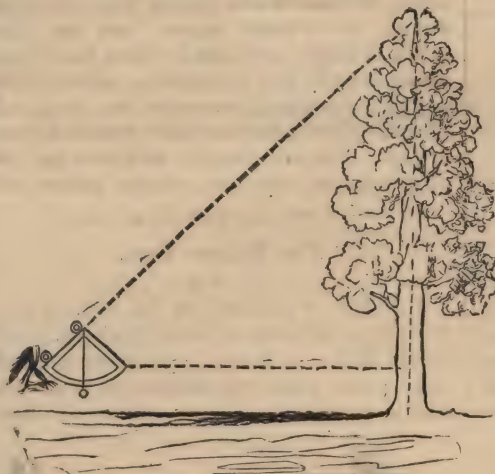
This selection is the only scientific combination I have used, and although I can not affirm that this proceeding is the cause of my success, I recommend this method to those who may be disposed to practice artificial fecundation with

other species of plants. Nevertheless I have not learned by my practice anything that can be called a theory, because among my seedlings coming from the same mother and the same father I have found them all differing from one another. My double White is the produce of a single White (one of my seedlings second or third generation) by a double Red; but four other seedlings from the same fecundation are either white, pink, or red, and all single flowers.

And there is nothing astonishing in this. Why should the laws of nature vary and act differently in the vegetable world from what they do in the animal world? Nature and science have not yet taught us why the offsprings of the same father and the same mother are *always* different from one another, notwithstanding their family likeness. And it is very likely that man will always be ignorant of this and many other laws of nature. The only thing I know, and every horticulturist knows, is that to obtain double flowers, single flowers must be impregnated by double ones.

Measuring the Height of Trees.

It is often desirable to determine the height of a tree, if not with mathematical correctness, with something approaching to accuracy. There are instruments made for the purpose of measuring with great precision, but there are several methods by which the height can be



MEASURING THE HEIGHT OF A TREE.

ascertained without expensive appliances. By measuring the shadow of a rod or other object of a known length and the shadow of the tree, a simple sum will give the height. Suppose that we measure the shadow of a perpendicular rod six feet long, or that of a man of the same height, and find it to measure eight feet, and then measure the shadow of the tree and find it to be 132 feet; then

$$\text{as } 8 \text{ ft.} : 6 \text{ ft.} :: 132 \text{ ft.} : 99 \text{ ft.}$$

The Gardeners' Chronicle figures a simple quadrant for tree-measuring which we here reproduce. A quarter of a circle is made of some light wood, and a small plumb-bob is suspended from what would be the center of the circle, and a mark made just half-way of the curved side of the quadrant. Two small eyes for sights attached to one of the straight edges make the implement complete. The quadrant is held as in the diagram, the operator moving backward or forwards until he can see the top of the tree through both sights, the plumb-line at the same time hanging over the mark. The distance of the observer from the tree, when he

can see the top of it in this manner, will be the height of the tree. Allowance must be made for the height of the eye from the ground, and for any difference in the level of the ground between the tree and the observer.

Yuccas and Insects.

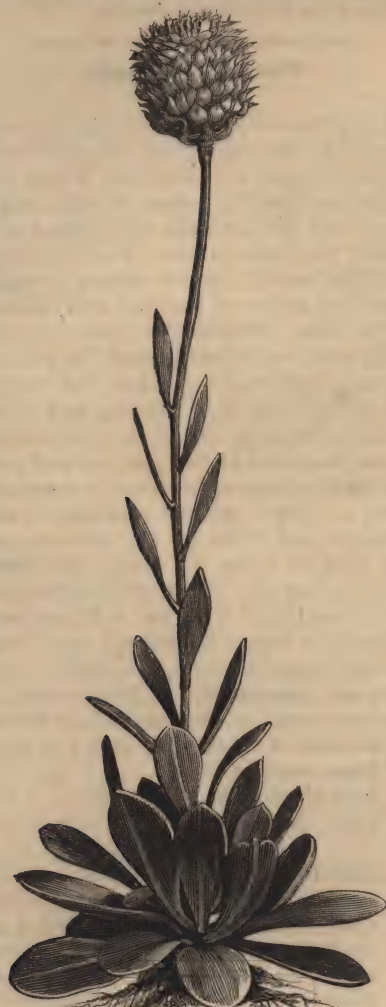
At the last meeting of the Association "with a name," Mr. Riley stated as a discovery of Dr. Engelmann, that our American Yuccas could be fertilized only by means of some artificial agency, and that an insect was engaged in the work. This insect, a moth, was described by Mr. Riley as one hitherto unknown to entomologists, and one by its structure well calculated for its work. The insect collects the pollen which would not otherwise reach the pistil, and places it upon that organ and lays her eggs. The young larva after hatching eats its way into the developing fruit, lives on the maturing Yucca seeds, and by the time the seed-pod is ripe the full-grown larva leaves the capsule and enters the ground, where it undergoes its transformation, and comes out the following spring as a moth to repeat the work. Mr. Riley is quoted as saying, "In the more northern portions of the United States and in Europe where Yuccas have been introduced and are cultivated for their showy blossoms, the insect does not exist, and consequently the Yuccas never produce seed there," and suggests that the insect be

captured in the chrysalis state and sent to those countries where it is lacking. Three large plants of the Adam's-Needle, or Bear-grass (*Yucca filamentosa*), in our garden near New York, produced fine clusters of capsules this autumn; upon examining them we found that apparently every seed-vessel either contained an insect, or had a hole showing where one had escaped. The capsule of this Yucca consists of three cells, and generally but one of them was inhabited by the larva, which destroyed the seeds in that, while the contents of the other two cells were untouched. All the capsules were one-sided or contorted, owing to the presence of the caterpillar. The fact is an interesting addition to our rapidly-accumulating knowledge of the relations between plants and insects, but it is a question if all Yuccas require this insect aid in order that they may produce seed, or that it is always neces-

sary, even with our commonest species, *Yucca filamentosa*. A very observing friend who made extensive experiments with seedling Yuccas in the hope of obtaining some new varieties, is quite sure that he has obtained crops of seed without any of the distortion of the capsule to which we have referred. A recent Gardener's Chronicle, alluding to the statement that Yuccas do not fruit in Europe, cites two cases in which *Y. filamentosa* produced seeds, which would show either that the moth in question is in Europe, that some other insect does the same work, or that the presence of an insect is not always required. During a recent visit to Georgia we found *Yucca gloriosa* in fruit. The fruit of *Y. filamentosa* is a dry capsule, while that of *Y. gloriosa* is pulpy, and when quite ripe is as soft as a banana. We examined a number of fruits of *Y. gloriosa*, and failed to find any distortion, perforation, or other indication that an insect had entered or made its exit. We hope that those who live where this and other species fruit will continue the investigation begun by Dr. Engelmann and Mr. Riley.

Vegetation in the "Pine Barrens."

There is no more interesting section of country than that extending from Ocean County to



YELLOW MILKWORT.

Cape May, New Jersey, commonly known as the Jersey "Pine Barrens." Here it is that many of our rarest plants are found, some species of which are not known in any other locality. There are the dry and the swampy "Pine Barrens." The former consist of large tracts of dry sand, covered with a growth of scrub oaks and pines; the latter, which border the coast, support a dense growth of Magnolias, Rhododendrons, etc. Many of the plants found here are very beautiful, while others are interesting on account of their rarity. We here figure two species which came from the swampy "Pine Barrens" in the vicinity of Tom's River. The *Gentiana angustifolia*, or Narrow-leaved Gentian, though having a wide range, is not often found growing in any considerable numbers in one place. The plant grows from six to twelve inches high, and bears one to three flowers; these are two inches long, of a beautiful azure blue, with the inside of the corolla striped with white. There are nine species

of Gentian found in the Northern States, all of which produce handsome flowers. One of these, *Gentiana Andrewsii*, or Closed Gentian, was figured in the *Agriculturist* for December, 1870.

Very little attention has been paid to the cultivation of Gentians in this country, owing to the supposed difficulty in growing them. When, as is usually the case, the plants are taken up from the fields, they seldom do well under cultivation, but if the seeds are sown as soon as ripe, they vegetate freely, and may be easily transplanted, though it requires several years before they become well established. The other plant we figure is the *Polygala lutea*, or Yellow Milkwort. The leaves are thick and fleshy, mostly clustered at the surface of the ground. From this cluster of leaves rises the flower-stalk, six to twelve inches high, usually bearing a solitary head of showy orange flowers. As it is a biennial, it can only be grown from seeds. We do not know that any attempt has ever been made to grow this plant, but it is worthy of a trial. Besides the plants mentioned there are many others which are interesting, though they generally have no common name, owing to their local character. One of the earliest found is *Pyxidanthera barbulata*. This is a prostrate evergreen plant, producing numerous white or rose colored flowers, which appear early in April, with the Trailing Arbutus. Following the *Pyxidanthera* is the Sand Myrtle, *Leiophyllum buxifolium*, a low, branching evergreen with terminal clusters of small, white flowers. Next follow *Helonias bullata*, bearing fragrant purple flowers, in a dense raceme, two or three inches in length, upon a stalk fifteen to eighteen inches in height, and *Xerophyllum asphodeloides*, a plant resembling somewhat an Asphodel, which produces a raceme of showy white flowers in June. The last two did well with us this year under cultivation in common garden soil.

The Pinneo Pear.

This pear, represented in figs. 1 and 2, was brought to the notice of the horticultural world by Mr. Hovey, of Boston, some years ago, and was by him called the Boston. It is an old variety, cultivated and quite extensively disse-

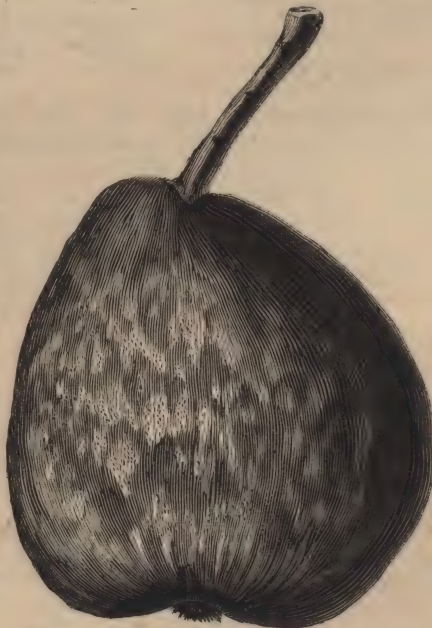


Fig. 1.—PINNEO PEAR.



Fig. 2.—SECTION OF PINNEO PEAR.

years ago, on the farm of Esquire Pinneo. It is a chance seedling which he found in an outlot where he was cutting brush. He transplanted it to a place near the house, thinking to graft it, but finally concluded to let it stand and mature the natural fruit. The pear was so good that

he never wished to change it, and his neighbors were so far of his mind that they came to him for grafts. It was scattered all through the northern part of New London County, and finally found its way to the Hartford and Boston markets. Mr. Hovey was so well pleased

with it that he propagated it, and sent it out extensively among horticulturists. There is no longer any doubt about the identity of the pears bearing these names of Pinneo and Boston. The tree is vigorous and productive, the young wood brownish red. The fruit is below medium size, obovate, inclining to conic, remotely pyriform. Skin yellow, with numerous small green or gray dots, and patches of russet all over the fruit, but much more upon one side than upon the other. The stem is rather long, and inserted in a slight depression, and sometimes a little upon one side. Calyx set in a broad, shallow basin. The flesh is white, tolerably juicy, with a pleasant, sweet, somewhat aromatic flavor. CONNECTICUT.

September.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Chopping and Choppers.

Chopping or mincing is one of the frequent mechanical operations of the kitchen. Where any

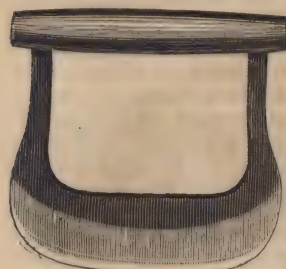


Fig. 1.—CHOPPING-KNIFE.

special apparatus is used for the purpose it is the old-fashioned chopping-knife, fig. 1, made with a curved cutting edge if a round or oval bowl is used, and with a straight one if a flat-bottomed tray is to hold the material to be chopped. Chopping in this way is tedious work, not on account of the strength required, as this is but little, provided the knife be sharp, but from the many blows or cuts necessary to reduce the material to the desired fineness. Sometimes the common knife is made with two blades, and this with some materials facilitates the work, while with others it is apt to clog. In fig. 2 is given a French chopping-knife, which is made of two blades a foot or more in length. The material to be minced is spread upon a chopping-board, and the knife is worked

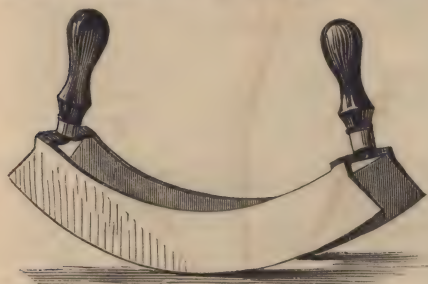


Fig. 2.—FRENCH CHOPPER.

with a rocking motion. The German butchers, who often chop meat for their customers, use two heavy cleavers, one in each hand; these play upon the meat alternately, and chop it rapidly, though at an unnecessary expense of strength. Chopping machines of various kinds have been devised, and have met with more or less success. One of the earliest of these was a cylinder in which the blades, placed on an axis in a spiral form, revolved against other blades attached to the interior of the cylinder. This, however, tore rather than cut the meat, and

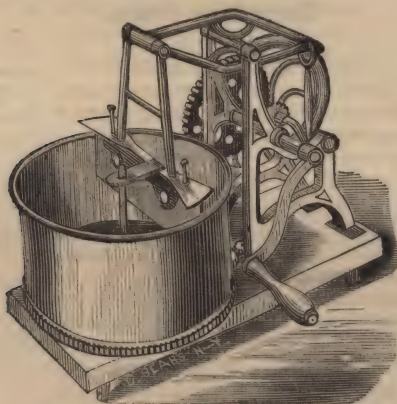


Fig. 3.—THE AMERICAN CHOPPER.

is now much less used than formerly. The latest chopping machine is called the "American Meat and Vegetable Chopper." It is made of several sizes, one of which is shown in figure 3. The knife is moved up and down in a cylinder which turns a short distance around with each movement of the knife, and thus exposes a fresh place to the

cutting edge. The motion is communicated by a crank, and by means of multiplying wheels is very rapid. The machine is much more simple than it appears to be, is easily cleaned and kept in order, and does its work in a very satisfactory manner.

New Heels in Old Socks.

I like to darn stockings, but sometimes the heels of my husband's socks gave way before his rough boots in such a shocking manner that I had no heart to undertake their repair, and was fain to provide new socks instead. The heels of these I lined with strong cloth. Once, before the use in our family of farmer's "stoga" boots, I thought it enough to run the heels with doubled yarn like the socks. In spite of even the linings, the heels would wear out all too soon, and a day came when my stocking-bag was no longer a pleasure, but just a reproach to me, and I dreaded nothing more than the call for clean socks.

One night, when the baby was restless and prevented my sleeping, light broke in upon my mind. Eureka! I was impatient for morning to dawn, and at the earliest convenient moment I sat down to make those socks "almost as good as new." I took strong cloth, new denim, hickory, drilling, or ducking, and cut out heels large enough to cover all the ragged portion of the sock-heel. All this ragged part I cut away, and put the new heels in double, the outer cloth being larger than the inner, in order that there might be no bungling place where the new heels joined on to the old socks. I turned in the edges of the outer heel and hemmed them down neatly, but the inner cloth I only cross-stitched on. It all took but little time, not one quarter so long as it would to knit in new heels, as some good knitters do, and I think the cloth heels will wear much longer, as none of these double cloth heels have worn out yet. I do not doubt that many and many a smart woman has made this discovery for herself long ago, but she failed to report it for the benefit of the sisterhood of stocking-darners—"hence these tears," and hence the delight I found in invention.

MARMAR.



HEELING A STOCKING.

Home Topics.

BY FAITH ROCHESTER.

THE SCHOOL EXHIBITION.—Some of the best teachers and some of the wisest parents are opposed to school exhibitions. These are of two kinds—the public examination and rehearsal, and the regular exhibition with its foot-lights, stage scenery, and dramatic performances. Of the latter we will speak first. Intelligent teachers get up these exhibitions with a good deal of secret misgiving as to their utility. They know that the learning of parts in dialogues, and the attendance at rehearsals, and all that, interfere with the regular progress of the pupils, or overtask them. They see also how the public display cultivates jealousy, and vanity, and selfish ambition among the little men and women. The rehearsals take place in the evening, and children going to them without the company of their parents are liable to exposures of health, and perhaps of morals, from which careful parents would protect them. The exhibitions usually take place in the evening, and close late. Late hours and crowds are bad enough when children are only quiet spectators and auditors, but when they are the excited actors upon the stage, subjects of the criticism or applause of the crowd, it is very great abuse of innocent childhood. Flushed and heated by the close air and by excitement, the children expose themselves to cold

draughts of air, and become victims of disease, sometimes of speedy death. Little girls are in especial danger of catching cold, because more barbarously exposed by their insufficient clothing. One would suppose that the parents of these rate their children's lives very cheaply.

The reason most frequently urged in favor of putting children upon the public stage is that "it gives them confidence"! O dear! So it does! But does it seem to you that Young America suffers from excess of modesty? Human nature hardly needs cultivation in the way of self-confidence, love of display, desire for applause. Oratory is well in its way, but I think it is over-rated. I have a suspicion, too, that our children may be taught to read and speak with proper expression, and with a natural (or, if you please, *dramatic*) rendering of conversations, better in the regular reading-class than in the especial training for exhibitions and theatricals. That subject is too large for this page, and I want to take it up again.

The public examination is superseding the old-fashioned dramatic school exhibition, and it has many firm friends among professional educators. The pupils are examined in the presence of their parents and friends, so that all may see just what progress has been made by each, and give credit accordingly. The expectation of these periodical examinations is supposed to act as a stimulus with teachers and pupils alike. That is the *idea* of the public examination, and if I had not been interested as pupil, as teacher, and not exactly as parent, but as elder sister and children's friend, I suppose I might not feel so much like calling these examinations a *humbug*. The parents are deceived most; the children take another lesson in the arts of deception, and in the immense importance of being able to make a show; and the teachers feel how almost impossible it is to help this wretched state of things until the public mind learns the true idea of education.

The public examination is no true test of the advancement of the pupils, or of the teacher's ability as an educator. Children naturally quick and ready show to the best advantage, while slower ones are abashed and discouraged. Those who need stimulus most get the least help from the public exhibition. Those whom nature has gifted with quicker wits, get praise which nurtures their self-conceit, instead of encouraging their lagging faculties. The poorest educators often make the best show as exhibitors on examination-day. They can show you that the pupils have been trained to a certain dexterity and mechanical precision, and to concert action which is very effective with the unreflecting crowd; but no teacher can exhibit the best things a good teacher can do in the way of education. The illustrations which have brightened all the daily tasks; the bits of history and biography which have endeared to each pupil textbooks otherwise dry and dull; opportune suggestions, as to methods of study; and, better still, sympathetic help toward the formation of noble character, toward the development of honest men and women with clear heads, and warm hearts, and helpful hands—can any public examination, yearly or monthly, make a true exhibit of these most precious works of an educator? Will it be likely to help or to hinder this larger education?

If you would satisfy yourself as to the faithfulness and ability of your children's teacher, go and see him or her at work two or three times at least every term, dropping in unexpected for fifteen minutes or a half-day, as you can find time. Let the teacher feel that your eye is on him and your heart in his work. If you talk with the children at home about their school work frequently, as well as visit them in school, it will do them a deal of good—provided all is done with true *sympathy*, and not in the character of a cool superior critic.

WARM FEET.—To go with cold feet is to undermine the constitution, and this half of the women and girls are doing. They have a habit of cold feet and an accompanying habit of ill-health. Thick, home-knit woolen stockings are not very fashionable. Once, no country girl was reckoned fit to be married until she had knit her pillow-case full of

stockings, but it is not so now. I do not regret that less hand-knitting is done now than formerly, but I hope we shall not give up warm woolen stockings for winter until we can replace them with something better. Merino, or the common "boughten" white wool stockings, are rather thin, but some of us supplement them with an additional pair of cotton stockings, wearing the cotton or the woolen pair next the feet, as individuals prefer. Cold feet are often caused, at least in part, by too tight elastics or bands at the tops of the stockings, or by tight shoes, or shoes tight in the ankles. These interfere with the circulation of the blood, and there can not be a comfortable degree of warmth without a good circulation and



Fig. 1.—OFFICE STOOL.

aeration of the blood. My last lesson in this matter came from baby's experience last September. Suddenly she contracted a habit of having cold feet, and when I warmed them the skin seemed hard and inactive, suggesting the need of a bath, when a bath did not seem necessary except for the feet. At length it occurred to me that her "ankle-ties" had been too loose, and just before we came home from our visit a young lady cousin had set the buttons back farther, to make the little slippers stay on better. Ever since that change the slipper-straps had been too tight around her ankles, especially after I put on woolen stockings. I changed the buttons again, and her feet no longer got cold, except in consequence



Fig. 2.—STOOL FOR TABLE.

of the actual rigors of the climate. Some well-informed persons object to Congress gaiters, the elastics are usually so firm and close about the ankle. Only very loose garters are allowable, and these may not be necessary when the stockings are worn over under-drawers. Garters in the shape of straps buttoning to both waist and stockings are most sensible for women as well as children.

Many women are obliged to work in kitchens where the floors in winter are always cold. It helps matters to have a carpet down, but the kitchen carpet is objectionable on the score of cleanliness, especially where there are many children. A few large thick rugs are better. These can be shaken often, and will afford the kitchen occupants warm places to stand or sit at their work. There are some very cold days when the mercury sinks from 10° to 30° below zero (in Minnesota), and then I wear my arctic overshoes all day, and the children also keep on overshoes. The floors of our houses are many degrees colder than the air about our heads.

One thing too little thought of in this connection is absolutely essential to healthy warmth of body. That is pure air. Men who work in the



Fig. 3.—LOW STOOL.

open air some every day have a great advantage over housekeepers. Their blood gets oxygenated, and so purified (as far as such a degree of air can do it) and prepared to warm and nourish the body, of which the blood is the constant up-builder. Everybody, male and female, old and young, ought to get out of doors some every day, and breathe freely *with the mouth closed*. The air of sleeping rooms and other living rooms should be purified each day.

Keep bricks or soapstones in the oven, to be wrapped up and put under your feet when you are obliged to sit for some time at a distance from the fire, especially if you are writing or studying.

HIGH SEATS AT TABLE FOR EX-BABIES.—There are nice large high-chairs, a little lower than regular baby high-chairs, to be found at some furniture stores, but many parents neglect to procure them when baby No. 1 is dethroned by baby No. 2. But no child of six or seven is large enough to sit comfortably and gracefully at table in a chair made to suit a grown person, especially if not allowed to put its feet upon the chair-rung. Its feet do not reach the floor, and are apt to swing about in a way to fret nervous people, and in a way that certainly is not graceful. And its elbows are not high enough to give it easy command of its plate and knife and fork. So, in teaching table manners, look first for the comfortable seating of your children. A cheap piano-stool does very well for an intermediate seat between high-chair and common dining-chair. Any man with tools can make one on a rainy day, if it seems too much to purchase a second high-chair.

A friend of ours purchased a high, yellow office-stool for a dollar. This was sawed off, to suit the needs of a child of six, above the lower rungs. A second very comfortable and useful seat was made of the part sawed off, by putting a square board atop, and cushioning it with gay woolen patchwork.

SKINNING SUN-FISH.—Mr. Rochester says that I was mistaken when I wrote that sun-fish are as easily skinned without scalding or scaling as with. It was found to be the best way to scale the fishes and wash them, also the hands, and then to strip off the skins, leaving the fishes all clean for cooking. In trying to skin the fishes without scaling, the whole got badly slimed. A small matter, perhaps, but having mentioned it, I had better get it right.

Toughening and Coddling.

BY REEL.

In certain minds there is a prejudice against protecting children much from the cold or from any hardships, for fear it will make them effeminate or unduly weak and dependent. One may be over-careful, it is true. There is such a thing as "coddling children" by a fussy, unwise tenderness, so that they develop no nerve, no power of endurance. There is also such a thing as false "toughening," a process that kills off the children of weaker constitutions. How steer clear of this Scylla without being drawn into that Charybdis?

To keep children close in warm rooms, never allowing them to feel a rough breath of air; to do everything for them, paying heed to every whimpered "I can't" and "I don't want to;" to inquire anxiously after all their preferences and listen pitiably to all their whining; to teach them no tasks, and never to let them get wholesomely tired—all that comes under the name of "coddling," and I pity the children who are put through the weakening process.

The false toughening which is equally to be avoided, is on its face a compound of neglect and cruelty; but sometimes it is deliberately undertaken by parents of really kind hearts, from mistaken ideas of what Nature really needs. What she needs is a fair chance to do her work. She has wonderful power of adaptation, but she can not stand everything; and if her children be pinched with cold and starved for nourishment, she will surely tell the tale in her own time and way. She says that her little animals (and she makes no exceptions in favor of humans) must have regular

meals of simple, nourishing materials, and that their growing bones and muscles should have plenty. And then she insists upon plenty of warmth. If the surface of the body gets chilled, some harm to internal organs is sure to result, though not always in a perceptible degree, at the particular time. A succession of such chills, or a shivering, half-cold condition for any length of time, makes a serious drain upon the vitality, and weak constitutions break down under it, and the little victims of neglect fall an easy prey to the diseases of winter's cold or summer's heat. These "die a-toughening."

To be tough is to be "strong and able to endure hardships." Strength is born of struggle. Ability to endure hardships is the result of discipline in the way of endurance. Some children are born with "iron constitutions," apparently; or *were* in our grandfathers' day—and they bore a wonderful amount of knocking-about and deprivation of one kind or another. You may think they turned out well enough in spite of it; but I don't. I think that many of those foreparents of remarkable mention came out of the hard mill in which they were ground, pitifully stunted and deformed in more ways than one, and that, too, in spite of their iron constitutions—constitutions so used up by their hard early life that they could not bequeath one half their own native vigor to the sons and daughters born of them.

Yet I believe in toughening children, and in discipline. But these are consistent with perfect tenderness and unceasing care. Turn them out of doors—no, never *turn* them out, but let them go, or coax them out if they have morbid fears. But have them so well protected with warm overcoats (give sleeved sacks to girls, instead of bothersome pretenses, called shawls), over-socks, or over-shoes with leggings, mittens, and hoods, or caps with ear-tabs, that they can run and coast and skate and slide and snow-ball without any discomfort from the north wind or the ice.

Teach children to wait upon themselves, and to take pleasure in helping others. Encourage them to bear necessary pain with as little fuss as possible. Give them good tools, and show an interest in their use of them. Show them *how* to work as you do, but *require* very little at first, letting them make things for friends, or do their tasks to "help" those they love, until they learn to feel an ambition about doing their work fast and thoroughly. Expect them to keep their engagements, and not allow them to back out of an undertaking as soon as the flush of novelty wears off. Therefore let them not attempt too much—unless to cure a habit of bragging. Give them long, warm night-clothes and bedding enough (too much will induce perspiration) to keep them warm in any position, and let them sleep in cool, ventilated rooms, and give them all the natural sleep they can take.

Devonshire Cream.

One of the noted luxuries of the London market is "Devonshire cream," or "clotted cream." The method of its preparation is as follows: From six to eight quarts of milk is strained into a thick earthenware pan or crock, which, when new, is prepared for use by being stood in clear cold water for several days, and then scalded three or four times with skimmed milk. Tin paus may be used if they are scalded in hot bran and left to stand with the bran in them for twenty-four hours. The milk being strained into the pan is stood in a cool room from nine to fourteen hours, according to the temperature. It is then carefully moved to the top of the stove or range, or placed over a bright fire (not too near it), and slowly heated—so that at the end of a half-hour the cream will have shrunk away from the sides of the pan and gathered into large wrinkles, the milk at the sides of the pan commencing to simmer. The pan is then carefully returned to the cool-room and left about ten hours, when the cream is skimmed off.

This cream is very delicious to use on fruit or preserves, and is esteemed a great luxury—selling for about the price per pound of the best butter.

BOYS & GIRLS' COLUMNS.

The Doctor Talks about Indian Relics.

Georgia is a queer place for the Doctor to write you from, but he finds himself here, and not liking to have the *Agriculturist* appear without a word to his boys and girls he writes from this far Southern State. One of our boys, Louis, lives here—where don't they live?—and he of course showed me his curiosities. Near his home he had found in the woods the place where had been some old Indian graves, and not many days ago he and another went and explored the spot. The graves were so old that about the only things to be found were stone imple-

ing them, and in trying to find out how they were made. This Mr. Evans, for that is the gentleman's name, has published a book which is full of fine engravings of the things that have been found in England and other parts of Europe. The puzzle as to how such things could be made out of flint and other hard stones without the aid of steel or iron he has solved by going to work and trying to make such things himself. He has found that by selecting the right kind of a stone, and using no other implement than another stone, he could make just as good arrow-heads and spear-heads as are found in the old graves and mounds. More than this, he discovered that by the use of a stick and sand he could drill just such holes as are in the ancient hammers and such things. To be sure, it required much patience and lots of "elbow-grease" to do it, but he proved that probably these early

thought at length that he had had enough of it. Then came the winding in of the string, which was almost as much fun as letting it out. Down, down came the kite, every now and then giving an angry toss as if it did not like to be taken away from its fine place up in the air, where it could look down upon everything. But Tommy kept on winding in the string, until at last, when quite near the earth, the saucy kite gave a toss of its tail, and came head foremost with a pitch to the ground. You may be sure that Tommy was over the fence in a minute to pick up his kite, and what was his surprise to see that it had come down in the midst of a flock of turkeys, and that the slack of the string was directly around the neck of the old gobbler! It was a very respectable gobbler, but not at all used to such tricks as this of the kite, so he immediately showed fight, and began to twist himself



TOMMY'S HOUR OF TROUBLE.



TOMMY'S HOUR OF TRIUMPH.

ments. You will think that implements are strange things to find in a grave, but you must know that almost all savages think that they can carry into the other world the things they have used in this. Believing this, the friends of an Indian bury with him his weapons, his ornaments, and his treasures, and some even kill a horse at his grave, so that the dead man may be mounted in the "happy hunting-grounds" to which he is going. Louis' collection contained various things that must have been buried with the occupants of the graves. There were large stone "arrow-heads," as they are called, but as these are over two inches long, and broad in proportion, I doubt if they were ever used upon arrows, as they are too heavy for this purpose. I have seen stone arrow-heads in use among the Indians of the present day, but these were slender, and not more than a tenth as heavy as those found in graves and mounds in various parts of the country. It looks more probable that these heavy so-called arrow-heads were used as spear or lance-heads, or they may have been fastened to a staff to be thrown by hand. I don't think any boy could carry an arrow with such a heavy weight at one end. Besides these war-like things, Louis found more or less perfect hammers or tomahawks, one of which had a neat hole bored through it, apparently to admit a handle. I am not sure that this particular piece was not a portion of a pipe. At any rate, there was a clean round hole in a solid stone an inch or more through. So far as we know, these early Indians—for these relics are so old that no one knows what tribes made and used them—had no hammers, drills, nor other tools of iron and steel, and how hard stone could be worked into these various shapes has always been a great puzzle.

Implements and other relics similar to those Louis and others have found in this country also occur in Europe, and an English gentleman has spent a lifetime in study-

inhabitants of England drilled their holes in stone in this slow and laborious manner. All relics like those my young friend Louis has collected are interesting, as they show us what were the habits of the people who inhabited the country long, long before our ancestors came here. We can now buy for a few dimes a hammer much better than one which the forgotten Indian spent weeks and perhaps months in making. It seems not so very strange that they desired to have these things, so precious on account of the labor expended on them, buried with them. There are but few places, even in what are called the "older States," where these Indian relics are not occasionally found, and in some of the Western and Southern States they are very abundant. Now, I would like to have those youngsters—whether boys or girls—to tell me about what things of this kind they find. It may be that something interesting will come of it.

Somewhere in Georgia, Oct. 26.

THE DOCTOR.

Tommy's Trouble and Triumph.

Is there any story needed with these two pictures—one showing the troubles which befell Tommy, and the other giving the scene when Tommy had the better of the cause of all his trouble? These pictures are intended for our little readers, and very young people like to have a little tale with the pictures, no matter how plainly they may tell their own story.

Once there was a boy whose name was Tommy—but there is no need to tell you that, for if there had been no boy Tommy, how could we have had any picture of him? Well, this boy Tommy had a kite; a new and a fine one, which his big brother John had made for him. Tommy went out one fine day to fly his kite. How that kite did fly, and what a happy boy was Tommy! It was great fun, to be sure, but after a while the best of fun, even that of flying a new kite, becomes tiresome, and Tommy

up worse and worse with the kite-string. Tommy made a hard struggle for his kite, but when he recovered it, it was not at all the beautiful new one that he had sent up that morning, but a poor, torn, dragged kite, that would have put its tail between its legs—only you see it had no legs. Tommy never liked that gobbler after the affray. Some months afterwards it came the gobbler's turn to furnish the family dinner, and when it appeared on the table Tommy looked mightily pleased. The rest of the family could not guess why Tommy's face wore such a broad grin, but he knew, and we think you do too.

Aunt Sue's Puzzle-Box.

NUMERICAL ENIGMA.

I am composed of 14 letters.
My 8, 14, 14, 5, 12 10 is to declare.
My 1, 7, 8, 9 is a design.
My 13, 11, 3, 4 is part of the body.
My 6, 2, 1 is a toy.
My whole are useful at night.

B. W. P.

PI.

A leanig nomtem fot ash eving
Thaw earey fo lito dan napi,
Fo goin, sourtunidis toll veah niverts
Ot niw, nda lal ni navi.

OWEGO.

ANAGRAMS.

- | | |
|----------------------|---------------------|
| 1. Rest my claim. | 6. In scant cover. |
| 2. Mundane flat. | 7. Happiest prince. |
| 3. Due in his mind. | 8. I a sure bond. |
| 4. I need cents. | 9. Ruin tiger. |
| 5. Nat's son hit me. | 10. Cleared vine. |

SQUARE WORD.

- | | | | | |
|------------------|-----------------------|---------------------------------|---------------------------------|----------------|
| 1. A round ball. | 2. A diseased person. | 3. A fashionable entertainment. | 4. What sailors steer clear of. | 5. To expunge. |
|------------------|-----------------------|---------------------------------|---------------------------------|----------------|

R. T. ISHESTER.



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A DREAM OF FAIRY LAND.—Drawn and Engraved for the American Agriculturist.

HOURL-GLASS PUZZLE.

1. Purity. 2. Something very welcome of a summer evening. 3. A fruit. 4. A pronoun. 5. A vowel. 6. A metal. 7. Steep acclivities. 8. An architect. 9. A flower. The center letters, read downwards, will give a word which means without fail. ALICE H. P.

GEOGRAPHICAL OPPOSITES.

- | | |
|-----------------|-----------------------|
| 1. Old shanty. | 6. How do you do? |
| 2. She's off. | 7. Don't marry Alice. |
| 3. Peace file. | 8. Martin's orchard. |
| 4. Land whist. | 9. Cow hat land rise. |
| 5. Genuine saw. | A. M. NAGEL. |

ANSWERS TO PUZZLES IN THE OCTOBER NUMBER.

NUMERICAL ENIGMA.—Steam.

CROSS-WORD.—Richmond.

SQUARE WORDS.

- | | | |
|---------|---------|---------|
| 1. PANG | 2. LAMB | 3. CAGE |
| AQUA | ALOE | AGUE |
| NULL | MOSS | GULL |
| GALL | BEST | EELS |

TRANSPOSITIONS.—1. Dismayed. 2. Wide-spread. 3. Embodiment. 4. Heartaches. 5. Heavenward. 6. Neuralgia.

PI.

Patience is a virtue,
Possess it if you can;
'Tis seldom seen in woman,
Less often seen in man.

ALPHABETICAL ARITHMETIC.

34792058265
694

2265
2082

1838
1735

103 (Key: Uncle Smith.)

ANAGRAMS.—1. Interminable. 2. Perpendicular. 3. Overpowered. 4. Congratulations. 5. Participated. 6. Plagiarist. 7. Re-appeared. 8. Solicitude. 9. Convulsions. 10. Prerogative.

All contributions for the PUZZLE-BOX may be sent to AUNT SUE, Box 111, P. O., Brooklyn, N. Y.

Jenny's Dream.

Jenny had many good friends who sent her Christmas presents. Most of them, knowing her to be fond of reading, sent her story-books, and these, together with the books given by her parents, made a nice child's library. How pleased was Jenny, and how she did read! No sooner had she finished one story than she began another. She could hardly leave her books long enough to take her meals, but she read on and on until she was so tired she fell asleep. It was a very wrong thing for Jenny to do, but the books were so pretty, and the stories were so fine, that she thought she could not read them half fast enough. She had filled her head with so many fancies that when she fell asleep she dreamed and saw in her dreams all the things she had been reading about. Our artist has pictured the things Jenny saw in her dream. There are Robinson Crusoe, and—but we will not tell you, because we wish you to have the fun of picking out the characters in the picture yourselves, and then you will know what Jenny had been reading.

While the claims of the various organ-makers are so persistently urged, the purchaser has one sure resource: he can hear and judge for himself.

IT IS EASY TO INQUIRE
and to be satisfied of the merits of the

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as it is sold by first-class dealers in all the principal cities and towns.

Ask for the

AMERICAN ORGAN

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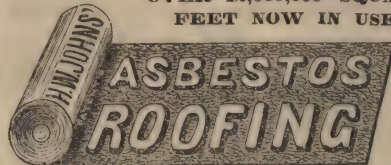
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Explanatory Notes. N. B.

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[In the following table is given the price of each article, and the number of subscribers required to get it free, at the regular rates, \$1.50 a year for *American Agriculturist*, and \$3.00 a year for *Hearth and Home*; also at the club rates of \$1 and \$2.50; also at the rates of \$4 a year for both papers together.] **Descriptions of Premiums on next page.**

N. B.—In all Premium Clubs for either paper, **TWO** copies of *American Agriculturist* (English or German) at \$1.50 each, and **ONE** copy of *Hearth and Home* at \$3.00, will count exactly the same. So also **two** copies of *American Agriculturist* at \$1 each, and **one** copy of *Hearth and Home* at \$2.50, will count exactly the same. In this way Premium Clubs can be made up from the 2d and 4th columns, or from the 3d and 5th, or wholly from the 6th column.

Table of Premiums and Terms, For American Agriculturist, and for Hearth and Home, for the Year 1873.

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No.	Names of Premium Articles.	\$1.50	\$1.	\$5.00	\$2.50	\$4.00
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2	Knives and Forks (do. do.)	\$20 00	30	102	15	51
3	Carver and Fork (do. do.)	\$5 50	14	40	8	20
4	French Cook's Knife, Fork, and Steel	\$4 25	10	34	6	17
5	Pocket Knife (Meriden Cutlery Co.)	\$1 50	4	12	3	11
6	Pocket Knife (do. do.)	\$2 00	6	18	4	15
7	Pocket Knife (do. do.)	\$2 75	7	22	5	14
8	Ladies' Pocket Knife (do. do.)	\$2 00	6	18	4	11
9	Multum in Parvo Knife (Miller Bros.)	\$3 50	8	22	4	11
10	Cake Basket (Lucius Hart Man'g Co.)	\$12 00	19	65	10	33
11	Revolving Butter Cooler (do. do.)	\$8 00	16	52	8	28
12	Card Receiver (do. do.)	\$7 00	16	49	8	28
13	Nut-picks and Crackers (do. do.)	\$12 00	19	65	10	33
14	Half-Dozen Napkin Rings (do. do.)	\$8 00	16	52	8	28
15	One Dozen Teaspoons (do. do.)	\$6 00	15	45	8	28
16	One Dozen Tablespoons (do. do.)	\$12 00	15	45	8	28
17	One Dozen Table Forks (do. do.)	\$12 00	19	65	10	33
18	Child's Cup (do. do.)	\$2 75	7	27	4	14
19	Gold Pen, Sil. Case (George F. Hawkes)	\$3 25	8	30	5	15
20	Gold Pen and Silver Case (do. do.)	\$5 00	12	37	7	19
21	Gold Pen. Handle gold-tipped (do. do.)	\$6 00	15	45	8	28
22	Ladies' Gold Pen and Rubber Case (do. do.)	\$6 00	15	45	8	28
23	Paragon Pat. Revolving Pencil (do.)	\$1 50	4	12	3	11
24	Paragon Pat. Revolving Pencil (do.)	\$3 00	8	24	5	15
25	Payson's Indelible Ink (do. do.)	75	3	2	2	2
26	Moore's Floral Set (Moore Man'g Co.)	\$1 00	3	2	2	2
27	Steam Engine (do. do.)	\$2 00	3	2	2	2
28	Garden Seeds & Flower Bulbs (selection)	60	6	22	4	11
29	Sewing Machine (Grover & Baker)	\$55 00	60	240	30	120
30	Sewing Machine (Florence)	\$65 00	74	285	37	145
31	Sewing Machine (Willcox & Gibbs)	\$55 00	60	240	30	120
32	Beckwith Sewing Machine, Improved	\$12 00	16	52	8	28
33	Bickford Family Knitting Machine	\$35 00	38	138	20	67
34	Washing Machine (Doty's)	\$15 00	22	75	11	38
35	Clothes Wringer (Best—Universal)	\$9 00	12	40	7	29
36	Melodeon, 8-octave (G. A. Prince & Co.)	\$77 00	75	295	39	148
37	Melodeon, 5-octave (do. do.)	\$112 00	138	400	69	200
38	Piano, Splendid 7-oct. (Steinway & Sons)	\$650 00	625	1630	313	815
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43	Charles Pratt's Astral Oil (can, 5 Gal.)	\$3 75	9	32	6	16
44	Hand Cultivator & Weeder (Comstock)	\$9 00	17	54	9	29
45	American Submerged Pump	\$15 00	22	75	11	38
46	Family Scales (Fairbanks & Co.)	\$14 00	21	70	11	35
47	Building Blocks (Crandall)	\$2 00	5	20	3	10
48	Boy's Own Boat (works by Steam)	\$2 50	6	22	4	11
49	Worcester's Great Illustrated Dictionary	\$10 00	15	48	8	29
50	Any back Volume Agriculturist	\$1 75	20	60	10	24
51	Any Two Back Volumes do.	\$3 50	20	60	10	24
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53	Any Four do. do. do.	\$7 00	15	47	8	24
54	Any Five do. do. do.	\$8 75	15	47	8	24
55	Any Six do. do. do.	\$10 50	19	61	10	32
56	Any Seven do. do. do.	\$12 25	21	68	11	34
57	Any Eight do. do. do.	\$14 00	23	74	12	37
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59	Any Ten do. do. do.	\$17 50	27	92	14	46
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93	Any Forty-four do. do. do.	\$77 00	33	110	17	55
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95	Any Forty-six do. do. do.	\$80 50	33	110	17	55
96	Any Forty-seven do. do. do.	\$82 25	33	110	17	55
97	Any Forty-eight do. do. do.	\$84 00	33	110	17	55
98	Any Forty-nine do. do. do.	\$85 75	33	110	17	55
99	Any Fifty do. do. do.	\$87 50	33	110	17	55
100	Any Fifty-one do. do. do.	\$89 25	33	110	17	55

Every Premium article is **new** and of the very **best** manufacture. No charge is made for packing or boxing any article in our Premium List. The Premiums, Nos. 5 to 9, 19 to 25, 28, 50 to 73, and 76 to 88 inclusive, will each be delivered **FREE** of all charges, by mail or express (at the Post-office or express office nearest the recipient), to any place in the United States or Territories.—(No. 27 mailed for 30 cents extra.) The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance desired. See **Description of Premiums on Next Page.**

Full Descriptions

of our Premiums are given in our last October number, which will be mailed free to applicants. We have room in this paper only for the following **Descriptive Notes**:

Nos. 1, 2, 3.—American Table Cutlery.—We are glad to be able to offer really good articles of American manufacture, such as are competing successfully with the best foreign make. **Messrs. Patterson Bros., 27 Park Row,** who supply us with these articles, are also importers of English goods. They recommend these Knives, manufactured by the **Meriden Cutlery Co.,** as equal to any Cutlery in the market, and their recommendation is a guarantee, wherever they are known. We offer two kinds of Knives, and three sizes of each kind. No. 1 have Rubber Handles, which are actually boiling-water proof, so that, if they were accidentally to remain in it for several minutes, or even hours, they would not be injured. The Blades are of the best steel, and warranted. Dessert size, with Forks, sold at \$15.... For 24 subscribers at \$1.50, or 89 at \$1, we will give either the medium size or the table size, sold at \$16.00. No. 2 have Ivory Handles, are selected with great care, have Steel Blades, and are beautiful goods. Dessert size, with Forks, sold at \$20.00.... For 33 subscribers, at \$1.50, or 110 at \$1, we will send the medium size, sold at \$22.00.... For 35 at \$1.50, or 116 at \$1, we will send the Table size, sold at \$23.00. The Forks, which accompany these Premiums, Nos. 1 and 2, are made of genuine Albata, and warranted double-plated with coin-silver. These Forks are furnished to us by Messrs. Patterson Bros.... The Carving-Knife and Fork are made by **The Meriden Cutlery Co.,** with the best Ivory, balanced Handles.

Nos. 5, 6, 7, 8.—Pocket Knives.—HERE'S FOR THE BOYS AND GIRLS!—These Premiums are among the most pleasing and useful that we have ever offered. Every boy, and girl too, wants a pocket knife. We give them an opportunity to obtain a most valuable one for merely a little effort. These knives are furnished by the **Meriden Cutlery Co., 49 Chambers st., New York,** whose work is equal to any done in this country or Europe. No. 5 is a neat, substantial Knife, with three blades and buck-horn handle. No. 6 is a still finer article, with four blades and pearl handle. No. 7 is an elegant Knife, with five blades and shell handle. No. 8 is a Lady's Pocket Knife, a beautiful article, with four blades and shell handle.

No. 9.—Multum in Parvo Pocket Knife.—This is a most attractive as well as useful Premium, from the well-known manufacturers, **Miller Bros' Cutlery Co., West Meriden, Conn.** It comprises, in one knife-handle, a large and a small blade, a screw-driver, a saw, a strong hook, a nut-cracker, a brad-awl, a gimlet, a corkscrew, a pointer, a slim punch, tweezers, and, in addition to this, it can be used for various other purposes which will at once suggest themselves to any smart boy or man. It is a pocketful of tools weighing but two ounces. The knives will be sent anywhere in our country, post-paid.

No. 10.—Cake Basket.—A new pattern, oval-shaped, or square, nicely chased—a very taking, useful, and beautiful table ornament. This, with other articles that follow, is made by the **Lucius Hart Manufacturing Co., of Nos. 4 and 6 Burling Slip, New York City,** and is warranted by them to be of the best triple plate. Mr. Hart, "the veteran Sunday-school man," was engaged in the same place and business for nearly a quarter of a century. We have known him and his work for many years, and have taken pleasure in commending and guaranteeing its value to be as represented. We believe the Company which bears his name is fully sustaining his reputation. The amount of silver upon plated ware depends wholly upon the will and integrity of the manufacturer. We could give nearly as good-looking plated ware for less than half the money.

Nos. 19, 20, 21.—Gold Pens: with ever-pointed Pencils, in extension, coin-silver cases.—Premium No. 19 contains the best No. 4 Gold Pen; and No. 20 the best No. 6 Gold Pen, which is the same style, but larger. No. 21 contains No. 7 Gold Pen, in Gold-tipped Ebony Holder. Each pen will be sent in a neat leather case by mail, post-paid. These pens are made by **Geo. F. Hawkes, No. 66 Nassau St.,** and have obtained an excellent reputation. We have known the maker and his goods for many years, and can recommend them.

Nos. 23, 24.—Paragon Patent Revolving Pencil.—This is a beautiful Pocket Pencil, which is extended or closed by pulling or pressing the head. They are made with great care, and every Pencil warranted to work perfectly. They are gold-plated, and will last for years. We offer two patterns, one for ladies, with ring for chain, at \$1.50 each, and one of heavier and firmer plate, at \$3.00. Same maker as No. 19.

No. 25.—Payson's Indelible Ink, and Briggs's Marking-Pen Combination.—Payson's Indelible Ink is too well known to need further commendation. It is almost indispensable in the family. Briggs's Marking-Pen has been before the public for fifteen years, and is justly celebrated for all kinds of marking, and particularly for writing upon coarse fabrics. The Pen and Ink are put up in a neat case, being thus portable, always ready for use, and protected from loss or injury by evaporation or breakage.

No. 27.—Steam-Engine.—This is a veritable steam-engine; one that will GO; and a capital, intensely interesting, and instructive article for boys, and grown-up people too. Our eleven-year-old boy ran his engine an average of an hour or more a day for six months; he exhibited it in motion to many of his playmates, hitched on various toy machinery, and it appeared to go just as well as when first started.

No. 34.—Doty's Improved Clothes Washer, with the Metropolitan Balance Weight. Over seventy-five thousand families in the United States are using the Doty Washing Machine, and we believe the improved machine has no superior. The "help" use it and like it. Send for descriptive circulars to **R. C. Browning, 32 Cortlandt St., New York,** or to **Metropolitan Washing Machine Co., Middlefield, Ct.** It goes cheaply by freight or Ex.

No. 35.—Universal Clothes Wringer.—A very useful, time-saving, strength-saving, clothes-saving implement, that should be in every family. The wringing of clothes by hand is hard upon the hands, arms, and chest, and the twisting stretches and breaks the fibers with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the articles. We have given thousands of these premiums, with almost universal satisfaction. They are made by the **Metropolitan Washing Machine Co., Middlefield, Ct. R. C. Browning, 32 Cortlandt St., N. Y.**

No. 40.—Ladies' Fine Gold Watch.—This elegant Premium will delight our friends who may receive it. Our arrangement with the **American Watch Co.** (see No. 39 above) includes these beautiful gold watches. They are full-jeweled, in 18-carat "hunting" cases, warranted to be made of the best materials, and possessing every requisite for a reliable Time-Keeper. Upon the movement of each Premium Watch will be engraved "AM. AGRICULTURIST. MADE BY THE AM. WATCH CO., WALTHAM, MASS."

No. 47.—Crandall's Improved Building Blocks furnish a most attractive amusement for children. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. For developing the ingenuity and taste of children they are unequaled. The Blocks are put up in neat boxes, accompanied by a large illustrated sheet giving various designs of buildings, etc. This is one of the most successful toys ever invented.

No. 48.—B. O. B.—The "Boy's Own Boat"—a Real Toy Steamboat, that will propel itself on the water for over half an hour. This beautiful toy is durably made, elegantly finished, and is just the thing for bath-tubs in winter and ponds and streams in summer. The boat is 18 inches long, and fitted with Ryder's Dollar Steam-Engine and Dodge's Propeller. The engine has a perfect-working safety-valve, whereby any excess of steam passes off. It is one of the most pleasing and instructive toys ever produced. Printed directions for management accompany each boat.

Nos. 76 to 87.—Good Libraries.—In these premiums, we offer a choice of Books for the **Farm, Garden, and Household.** The person entitled to any one of the premiums 76 to 87 may select any books desired from the list of our books published monthly in the *American Agriculturist*, to the amount of the premiums, and the books will be forwarded, Post or Express paid. Let the farmers of a neighborhood unite their efforts, and through these premiums get an agricultural library for general use. See Table List of Books in advertising columns.

No. 88.—General Book Premium.—Any one sending 25 or more names, may select books from our list to the amount of 10 cents for each subscriber sent at \$1; or 30 cents for each name sent at \$1.20; or 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through, by us. See List as in No. 76.

No. 89.—Remington's Breech-loading, Single-Barrel Shot-Gun.—This gun has the best quality barrel, 32-in. gauge. No. 16, weight 6½ lbs., using "Draper's" patent brass shells, which can

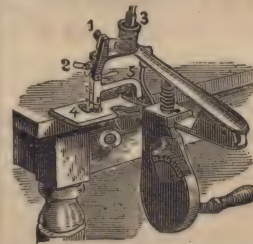
be reloaded over and over again, and will last nearly as long as the gun. Ordinary gun-caps and wads used in loading. Breech system same as the celebrated Remington's military and sporting guns. This Premium includes gun, with varnished stock, one shell and loader. Price of cartridge shells, \$3.00 per dozen extra. These guns are manufactured by the noted firm of **E. Remington & Sons, Nos. 281 and 283 Broadway, New York,** whose reputation is world-wide, and who stand in the front rank of manufacturers of fire-arms.

A GREAT BOON. A Good Cheap Sewing-Machine at Last.

We have been offering as a Premium, for some months past, the **Beckwith Sewing Machine,** which was fully described in the *American Agriculturist* for March and April, 1872. We have already given and sold some hundreds of these machines, and testimonials of satisfaction have come from every quarter.

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SPECIAL POINTS TO OBSERVE—(See "Directions" on inside of cover of each box.)



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2. Thumb-screw that fastens the needle. Also to set needle for long or short stitch, as per "Directions" No. 8.
3. Rubber that goes on to the spindle, but must not touch the spool.
4. Cloth-plate with slot in it, and thumb-screw to fasten hemmer and guide.
5. Presser-foot arm, to which is attached the presser-foot with braider. Also a lever for raising foot. Within the upright portion of arm is a spiral spring that holds the foot firmly to the cloth. To sew on braid, pass the end of braid through the forward opening in presser-foot so it can reach the needle.

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The New Sewing Machine as a PREMIUM without Money.

To enable those to get this machine who can not raise even the \$12 to buy it, we make the following offer:

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Almost any lady can readily secure this small number of subscribers and get a machine free; or some friend can thus obtain it for her, as a present.

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FOR THE USE OF

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By JAMES H. MONCKTON,

AUTHOR OF "THE AMERICAN STAIR-BUILDER."

In the preparation of this work the Author has aimed at the most concise possible explanations. Carpenters have no time for extensive studies, and therefore require a careful selection of what to them will prove of the highest practical utility, the greatest amount of valuable information in the smallest compass. In my judgment, no one is qualified to prepare a really useful book in any department of instruction who does not know by actual labor and experience the practical needs of those whom he seeks to instruct. Many years' experience as a workman, a student, and as a teacher of the subjects treated, have taught the author what is required, and also the best manner of presenting each case so as to make it available to the learner with the least effort and time.

To impart exceedingly valuable information never before published, knowing by experience the need of a complete and practical book on Constructive Carpentry, embracing all modern improvements, is the principal reason that induced the author to undertake this work.

Each drawing has been made and every word written as if no other work of the kind had been published, and yet the author acknowledges, to some extent, his indebtedness, either directly or indirectly, to every original author or mechanic that has preceded him.

The large and simple reference letters, cast expressly for this work, also the two colors of ink used in the accompanying drawings—in this connection unique—can not fail to be appreciated by the student.

Before closing these prefatory remarks, the casual examiner, and more particularly the intelligent student, are requested to give special attention to the following examples and their treatment:

A method of drawing every form of face-mould without ordinates, in connection with which the solids introduced and made use of show an easy practical way of acquiring a knowledge of the principles of hand-railing.—Plates 3 to 8.

A second method, and an example of every kind of face-mould drawn by ordinates.—Plates **D, E, and F.**

The object, application, and use of face-moulds for squaring wreaths.—Plate 9.

Shaping the top and bottom of wreath-pieces by finding correct center lines to work from on the plumb-sides of wreath.—Plate **A.**

The proper way to plan and arrange the treads of winding stairs, head-room, etc.—Plate 10.

How to lay out from its edge a string for winders having treads of different widths by the use of the mean tread.—Plate 12, fig. 2.

Case of hand-rail showing how to make one instead of two wreath-pieces serve every practical purpose. Plate 15, figs. 10 and 11.

Management of a steamboat stairs and hand-rail.—Plate 16.

Construction of stairs for wholesale stores having close strings, paneling, etc.—Plate 18.

Simple method of controlling and working a flat curved side-wreath mitering to newel-cap.—Plate 20.

Angle newel stairs, designs, plans, and elevations.—Plates 23 and 41.

Bending-strings, building-forms, saw-kerfing, laminated and solid mouldings.—Plate 26.

The true method of planning elliptic stairs.—Plate 32.

Designs for newels and balusters.—Plates **F, 39, 40, and 41.**

Plans and management of close paneled curved strings with continued hand-rails.—Plates 33 to 36.

Twenty-two complete plans of stairs variously arranged, drawn to a scale, and all their dimensions figured.—Plates 37 and 38.

Design for wainscoting, thirteen forms for hand-rails.—Plate 39.

Design for a floral bower, etc.—Plate 42.

Door-making in detail, including the best hard-wood doors.—Plate 43.

How to make window-frames for brick and wood houses.—Plate 44.

Sash-making, glazing, and hanging.—Plate 45.

To find the form from any given moulding for the face-edge of a revolving cutting-iron.—Plate 57.

Splayed work, of great variety.—Plates 58 to 61.

Pitching planes, a preparatory study to roofing.—Plate 64.

Roofing, giving bevels and lengths of all timbers.—Plates 65 to 69.

French roofs, in detail.—Plates 70 and 71.

Balloon-framing.—Plates 80 to 83.

Without asking further special consideration of the value and uses of the remaining contents, and their manner of presentation, the Author would say in conclusion, that the most of the above features being new, and not before contained in any work on Carpentry, and many of them of very great value, the whole is respectfully submitted with the fullest confidence that the book will gain the approval of all who require the instruction it proffers.

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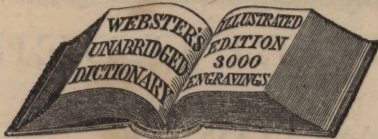
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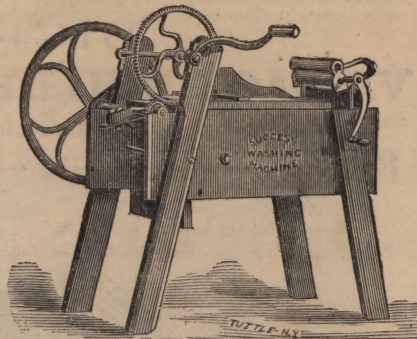
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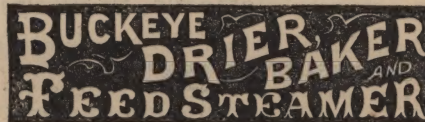
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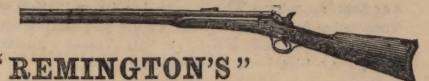
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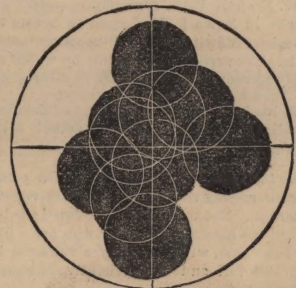


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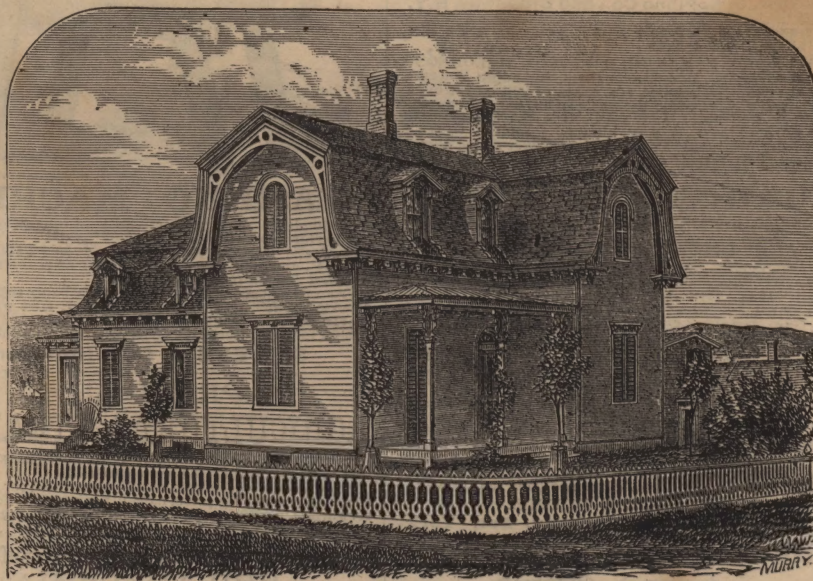
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